

THOMASON
COLLEGE OF CIVIL ENGINEERING
ROORKEE, U. P.

CALENDAR
1942-43



ALLAHABAD
SUPERINTENDENT, PRINTING AND STATIONERY, UNITED PROVINCES, IN
1943

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THOMASON COLLEGE OF CIVIL ENGINEERING

CALENDAR, 1942-43 SESSION

GENERAL AND OFFICE

OCTOBER, 1942

NOVEMBER, 1942

Dates	Days of week	General and Office	Dates	Days of week	General and Office
1	Th	Rent roll to the Accountant General, United Provinces	1	S	Rent roll to the Accountant General United Provinces
2	"		2	M	
3	S		3	T	
4	S		4	W	
5	M		5	Th	
6	T		6	F	
7	W		7	S	
8	Th	Last Fr day of Purnima	8	S	Dussehra
9	F		9	M	
	S		10	T	
1	S	Id ul Fitr	11	W	
12	M		12	Th	
13	T		13	F	
14	W		14	S	
15	Th				
16	F		15	S	
17	S	Dussehra	16	M	
	S	{ Dussehra	17	T	
9	M		18	W	
10	T	Date of re opening of the College	19	Th	
11	W		20	F	
12	Th		21	S	Guru Nanak's Birthday
13	F				
14	S		22	S	
15	S		23	M	
16	M		24	T	
17	T		25	W	
18	W		26	Th	
19	Th		27	F	
	F		28	S	
	S		29	S	

DECEMBER, 1942

Dates	Days of week	General and Office
1	T	Roll call to the Accountant General, United Provinces.
2	W	
3	Th	
4	F	
5	S	
6	S	
7	M	
8	T	
9	W	
10	Th	
11	F	
12	S	
13	S	
14	M	
15	T	
16	W	
17	Th	
18	F	
19	S	Idu Z'ho
20	S	Final Sports day
21	M	Meeting of Old Boys Association.
22	T	Christmas Vacation commences.
23	W	
24	Th	
25	F	
26	S	
27	S	
28	M	
29	T	
30	W	
31	Th	

JANUARY, 1943

Dates	Days of week	General and Office
1	F	New Year's Day.
2	S	Roll call to the Accountant General, United Provinces.
3	S	
4	M	
5	T	
6	W	
7	Th	
8	F	
9	S	
10	S	
11	M	
12	T	Guru Gobind Singh's Birth Day
13	W	
14	Th	
15	F	
16	S	Molarrun
17	S	
18	M	Civil Engineering class, 2nd year Mid-Semester Examination starts.
19	T	
20	W	
21	Th	
22	F	
23	S	Civil Engineering class, 2nd year, survey Camp starts.
24	S	
25	M	
26	T	
27	W	
28	Th	
29	F	
30	S	
31	S	

FEBRUARY, 1943

Date	Days of week	General and Office
1	M	Civil Engineer class 1st year and overseer class 1st and 2nd year Mid Sessional Examinations start Rent roll to the Accountant General, United Provinces
2	T	
3	W	
4	Th	
5	F	
6	S	
7	S	Civil Engineer and and 1st year and Overseer class and and 1st years 2nd term or 2nd Half Session starts <i>Basant Panchmi</i>
8	M	
9	T	
10	W	
11	Th	
12	F	
13	S	2nd year Civil Engineer class returns from Survey Camp
14	S	
15	M	
16	T	
17	W	
18	Th	
19	F	
20	S	
21	S	
22	M	
23	T	
24	W	
25	Th	
26	F	
27	S	
28	S	

MARCH, 1943

Date	Days of week	General and Office
1	M	Rent roll to the Accountant General, United Provinces.
2	T	
3	W	
4	Th	<i>Shiva Ratri</i>
5	F	
6	S	
7	S	
8	M	
9	T	
10	W	
11	Th	
12	F	
13	S	
14	S	
15	M	
16	T	
17	W	
18	Th	
19	F	<i>Bara Wafat.</i>
20	S	
21	S	
22	M	} <i>Holi.</i>
23	T	
24	W	Count certificate forms to be supplied to officer Final Examination Civil Engineer III year Course of Study and Syllabus to be sent to the Director of Public Instruction, United Provinces
25	Th	Registration of abbreviated telegraphic address
26	F	Letter to Director of Public Instruction, United Provinces regarding training of apprentice overseers
27	S	
28	S	
29	M	
30	T	
31	W	Minor Project Civil Engineer III year handed out. Figures of educated employed and unemployed to be sent to the Director of Public Instruction United Provinces

APRIL, 1943

MAY, 1943

Date	Days of week	General and Office	Date	Days of week	General and Office
1	Th	Reel roll to the Accountant General, United Provinces	1	S	Reel roll to the Accountant General United Provinces
2	F		2	S	
3	S		3	M	Project to Overseer class handed out
4	S		4	T	
5	M		5	W	
6	T		6	Th	
7	W		7	F	
8	Th		8	S	Statistical return
9	F		9	S	
10	S		10	M	
11	S		11	T	
12	M		12	W	
13	T	Hardware Fair	13	Th	
14	W	Ram Navmi	14	F	Detailed statement of permanent establishment to be sent to the Accountant General, United Provinces.
15	Th		15	S	Schedule of new demands
16	F		16	S	
17	S		17	M	Return of excess tent.
18	S		18	T	
19	M	Minor project III year Civil Engineer class (anfield) and Major project (anfield) out	19	W	
20	T		20	Th	
21	W		21	F	
22	Th		22	S	
23	F	Good Friday	23	S	
24	S	Saturday before Easter.	24	M	Empire Day.
25	S		25	T	
26	M	Easter Monday.	26	W	
27	T	Final examination II year Overseer class starts	27	Th	
28	W		28	F	
29	Th		29	S	Entrance examinations for Overseer class start
30	F		30	S	
			31	M	

JUNE, 1943

JULY, 1943

Date	Days of week	General and Office	Date	Days of week	General and Office
1	T	Rent roll to the Accountant General, United Provinces.	1	Th	Rent roll to the Accountant General, United Provinces.
2	W	Entrance examinations for Civil Engineer and Draftsman classes start	2	F	1st and 2nd year Civil Engineer classes and Overseer class 1st year cease
3	Th		3	S	
4	F		4	S	
5	S	Major Project III year Civil Engineer class and Project II year Overseer class handed-in	5	M	
6	S	Seasonal Examination of Civil Engineer class 1st and 2nd years and Overseer class 1st year start	6	T	
7	M		7	W	Probable date of Convocation
8	T		8	Th	
9	W		9	F	
10	Th		10	S	
11	F		11	S	
12	S		12	M	
13	S	Regular classes of 1st and 2nd year Civil Engineer and 1st year Overseer class start	13	T	
14	M		14	W	
15	T		15	Th	
16	W		16	F	
17	Th		17	S	
18	F		18	S	
19	S		19	M	
20	S	Return of textile requirements to the Director of Public Instruction, United Provinces	20	T	
21	M		21	W	
22	T		22	Th	
23	W		23	F	
24	Th		24	S	
25	F		25	S	
26	S		26	M	
27	S		27	T	
28	M		28	W	
29	T		29	Th	
30	W		30	F	
			31	S	

AUGUST, 1943

SEPTEMBER, 1943

Date	Days of week	General and Office	Date	Days of week	General and Office
1	S	Rent roll to the Accountant General, United Provinces Statement of non-gazetted officers over 55 years of age	1	W	Rent roll to the Accountant General, United Provinces
2	M		2	Th	
3	T		3	F	
4	W		4	S	
5	Th				
6	F		5	S	
7	S		6	M	
			7	T	
8	S		8	W	
9	M		9	Th	
10	T		10	F	
11	W		11	S	
12	Th				
13	F		12	S	
14	S		13	M	
			14	T	
15	S	Shobh Barot	15	W	Raksha Bandhan
16	M		16	Th	
17	T		17	F	
18	W		18	S	
19	Th				
20	F		19	S	
21	S		20	M	
			21	T	
22	S	Janam Ishtami	22	W	
23	M		23	Th	
24	T		24	F	
25	W		25	S	
26	Th				
27	F		26	S	
28	S		27	M	
			28	T	
29	S		29	W	
30	M		30	Th	
31	T				

OCTOBER, 1947

Date	Days of week	General and Office
1	F	<i>Last Friday of Ramzan</i>
2	S	<i>Id ul Fitr.</i>
3	S	<i>Id ul Fitr</i>
4	M	Rent roll to the Accountant General, United Provinces
5	T	} <i>Daschra.</i>
6	W	
7	Th	
8	F	
9	S	
10	S	
11	M	
12	T	
13	W	
14	Th	
15	F	
16	S	Probable date of re-opening the College
17	S	
18	M	
19	T	
20	W	
21	Th	
22	F	
23	S	
24	S	
25	M	
26	T	
27	W	
28	Th	} <i>Diwali.</i>
29	F	
30	S	
31	S	

NOVEMBER, 1947

Date	Days of week	General and Office
1	M	Rent roll to the Accountant General, United Provinces.
2	T	
3	W	
4	T	
5	F	
6	S	
7	S	
8	M	
9	T	
10	W	
11	Th	<i>Guru Nanak's Birthday.</i>
12	F	
13	S	
14	S	
15	M	
16	T	
17	W	
18	Th	
19	F	
20	S	
21	S	
22	M	
23	T	
24	W	
25	Th	
26	F	
27	S	
28	S	
29	M	
30	T	

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G LACEY, Esq BSc, CIE, ISE, Chief Engineer, Eastern Canals, United Provinces, with the Staff

Mechanical and Electrical Engineering

B L SHARMA, B SC, HONS Officiating Assistant Profes-
(ELECT ENGRG BRISTOL), sor of Mechanical and
AMIEE Electrical Engineering.

JAGDAMBA IRASAD, B SC, Lecturer in Mechanical En-
(ENGRG), DIP RIC, GLASGOW gineering.
AMIEE

ZAKI-UD DIN AHMAD, B SC. Lecturer in Electrical En-
HONS, DIC, PH D. gineering.
(ENGINEERING), LONDON.

NAND SINGH Foreman Moulder.
P C DUTT Foreman Mechanic
RAFIQ AHMAD Foreman Carpenter.

Overseer Class and Draftsman Class

P. C SEN GUPTA, B SC (ALL) Head Master.
Vacant Instructor.
JEWAN LAL Instructor
REOTINANDAN .. . Instructor.

Office

MOHAN LAL BHARGAVA .. Head Clerk.
HARDWARI LAL .. . Accountant.

Library

MUHAMMAD ISHTIAQ ANSARI Librarian
*B A DIPLOMATE IN LIBRARY
SCIENCE

GENERAL DESCRIPTION OF THE THOMASON COLLEGE

THE Thomason College is a provincial institution maintained and controlled by the Government of the United Provinces but students are admitted under certain conditions, from the Central Provinces Central India, Rajputana and Burma the Governments of these Provinces paying the cost of training their students. A few students are admitted annually from certain Indian States under special conditions. Every candidate for entrance is required to produce *certain educational and other certificates before he is* permitted to appear in the annual competitive entrance examination of his class. The competition is keen. Candidates are not admitted from the provinces of Bengal, Bombay Madras, or Punjab, as these provinces have their own engineering colleges. Full details of the conditions of admission to the Thomason College appear in the circulars of the various classes. These circulars are obtainable from the College on prepayment of 9 pies stamps for postage, and are included in this calendar.

The Thomason College now admits successful and fully qualified candidates to the following classes

- (a) Civil Engineer Class
- (b) Overseer Class
- (c) Draftsman Class

The Course of Study in the College for each of these classes is given in the Course of Study and Syllabus pamphlet of the class. These pamphlets are obtainable, on payment from the College Book Depot and are included in this calendar. The Civil Engineer Class course is of three years' duration,

and candidates for it must not be under 17 or above 25 years of age on 1st June immediately preceding the competitive entrance examination, which is held annually in June. The Overseer Class course is of two years' duration and the age limits in this case are 16 and 25 years under the same conditions. The Draftsman Class course is usually of three years' duration and candidates for this class must not be under 15 or above 21 years of age on 1st June immediately preceding the entrance examination. The qualifying educational standard for the entrance examination of the Draftsman Class is much lower than for the other classes and the entrance examination standard also is lower.

The Civil Engineer Class course approximates to the degree standard in engineering of a British university. The Thomason College grants a diploma on the successful completion of the course. The first year of the course is devoted to Applied Mathematics, Surveying and Drawing, Science and Elementary Civil and Mechanical Engineering, the second year to advanced Mathematics, Theory of Structures, Surveying and Civil, Mechanical and Electrical Engineering, and the third year to mainly Civil Engineering, its designs and projects and to Mechanical and Electrical Engineering. An important test of a student's practical ability takes place in the third year, in which, after the preliminary projects, which are set, corrected and criticized by internal examiners, a two months' engineering project is set by an outside examiner. The third year students go into camp for the first portion of this project period and each student works alone across country with his own instruments (theodolite, level and plane table) and his gang of men, returning to Roorkee when he has finished his work in the field to complete his report, designs, calculations, estimates and survey plates. This test, which carries a large number of marks, effectually

eliminate the pure theorist from the upper half of the class, and brings to the fore the man of common sense, ability character and initiative. The project work is preceded by the final examination which for this class takes place in the last week of March. The Overseer Class students also execute at the end of second year a small project in Roadlee to test their practical skill and application of principles which they learn during their two years course. This project is also preceded by the final examination which for this class takes place in the 1st week of April.

For other classes sessional examinations are held in June before the end of each College Session also mid sessional examination for all classes are held by the first week of February each year. Every student is required to obtain a certain qualifying standard (see pages 148 and 186) for promotion to the next class. The college session usually begins on 16th October and usually ends on 15th July. Each session is followed by a long vacation of three months during the unhealthy monsoon period when outdoor work would be impossible. During each session, the College closes for ten days at Christmas.

According to the total number of marks obtained details of which are given on pages 148 and 186 the following awards are made to students who successfully complete the College course

Civil Engineer class students	}	An Honours or Ordinary Diploma
Overseer class students		A Higher or Ordinary Certificate
Draftsman class students		Certificate as Draftsman
		If qualified in estimating a remark to that effect will be given in the certificate

A successful Civil Engineer class student is usually posted as an unpaid apprentice to the Public Works department in the

Province of his domicile for one year to learn practical methods of work and the control of labour

Overseer class students of United Provinces domicile are offered unpaid apprenticeships in the Public Works Department. At the end of the year of apprenticeship, appointments to the Subordinate Engineering Service of the United Provinces depend on vacancies.

An employment register is maintained for the benefit of those students who do not obtain employment or are out of employment.

The probable current monthly expenses of a student are shown at end of the circular of each class. A number of scholarships are awarded in the Civil Engineer Class, Overseer Class and Draftsman Class.

The Thomason College main building is large and spacious. It has laboratories, classrooms and model rooms for the various departments. The equipment of instruments and apparatus is complete and as up to date as funds permit. The College Workshops are also well fitted with machinery and apparatus. The College has its own Dairy, Hospital, Book Depot, Meteorological Observatory and an electrical supply system giving current for electric lights, fans and motors in all buildings. The drinking water is pumped direct from tube wells into overhead reservoirs. All the pumps are operated electrically. The Civil Engineer Class and Overseer Class *students and some of the Draftsman Class students live in Hostels* grouped in the rear of the College. Each student of the Civil Engineer class has a furnished room and bathroom. The Civil Engineer Class students have both a club and a common mess. To join the former is compulsory and to join the latter is optional. Most of the staff have detached bungalows with

gardens. A plan of the College and a map of the estate appear at the end of this calendar. Many facilities for recreation are provided for the students. There are a number of tennis courts, squash racquets courts, football and hockey grounds, a cricket ground and a large boat club on the Ganges Canal with rowing and sculling boats. The students are encouraged to take part in all games and sports in order to fit them for their profession and also for their own benefit. Athletic Sports and a Regatta are held annually and all *Civil Engineer Class* students are now enrolled in the Indian Auxiliary Force or the University Training Corps for military training, while the *Overseer Class* students perform physical drill under a military instructor. Physical drill is compulsory for all students.

HISTORY OF THE THOMASON COLLEGE

The Thomason College the oldest engineering college in India owes its birth to the waters of Mother Ganges. Without the River Ganges there would have been no canal of that name and, without the canal, no college at Roorkee. The Ganges Canal soon reached maturity, but its offspring, the Thomason College, planned by men of wisdom and foresight, grew steadily from the smallest beginnings till it attained the proud position which it now holds as one of the leading educational institutions of the East with great traditions and a reputation second to none.

The establishment of an engineering college at Roorkee was suggested to the Honourable James Thomason, Lieut. Governor of the North West Provinces, about 1846, by Colonel Cautley of the Bengal Engineers, who had been Superintendent General of Canals since 1836 and was busily engaged in the scheme, first contemplated by Colonel Colvin of the same Corps, for the employment of the waters of the Ganges for irrigation. While there is no doubt that the immediate requirements of the Ganges Canal in engineer officers and subordinates were chiefly responsible for the foundation of the Thomason College, it is probable that broader issues also influenced the minds of Mr Thomason and his advisers and that an important point was the necessity for some systematic training for Civil Engineers in India, or at least in Northern India. The Western Jumna Canals were commenced in 1817 and the Eastern Jumna Canal in 1822. In 1847 the annual expenditure on establishment for these undertakings was Rs 1 04 000 and on annual repairs

Rs. 30 000 In Dohra Dun, Rohilkhand and near Delhi works for drainage and irrigation were maintained requiring skilful superintendence The roads from Jubbulpur to Mirzapur the grand trunk roads from Calcutta to Delhi and from Agra to Bombay and the Land Revenue Settlement Survey had been completed It was apparent that there existed a large demand for skill in every branch of Civil Engineering To meet this demand there were officers of the Army European non commissioned officers and soldiers and Indians To make these men efficient agents, the well educated Europeans lately arrived in the country required instruction in Indian languages and in the peculiarities of materials and construction in India The European soldiers required scientific instruction and the Indians from their local experience and ability to bear exposure to the climate were likely to prove efficient instruments if they were well taught and inspired with a proper sense of responsibility

As early as the year 1845 Lieutenant Baird Smith of the Bengal Engineers then Superintendent of the Eastern Jumna Canal began training young Indians at Saharanpur in Civil Engineering for the grade of Sub Assistant Executive Engineer and in 1846 twenty candidates were admitted to this class In 1847 after the First Punjab War, Lord Hardinge the Governor General determined on the vigorous prosecution of the Ganges Canal scheme This undertaking, especially in the first few miles of its course, was beset with great engineering difficulties Evidently it would tax to the utmost the skill industry and resources of the people and country The science that was necessary to construct a work of this magnitude would also be kept constantly in exercise for its maintenance improvement and extension Immediate measures were necessary to provide a constant supply of well trained and experienced Engineers Out of this emergency, the Roorlee College arose later to be known as the Thomason College

The circumstances which caused the selection of Roorkee as the site for the College were thus stated in the proposal made to the Governor-General on September 23, 1847 :

The establishments now forming at Roorkee, near the Solani Aqueduct on the Ganges Canal, afford peculiar facilities for instructing Civil Engineers. There are large workshops and most important structures in course of formation. There are also a library and a model room. Above all, a number of scientific and experienced officers are constantly assembled on the spot or occasionally resorting thither. These officers, however, all have their appropriate and engrossing duties to perform and cannot give time for that careful and systematic instruction which is necessary for the formation of an expert Civil Engineer. On these accounts the Lieutenant Governor would propose the establishment at Pookee of an institution for the education of Civil Engineers which should be under the direction of the Local Government in the Education department."

The proposal obtained the immediate and cordial support of the Governor General in India. On October 19, 1847, Lieutenant R. Maclagan of the Engineers* was appointed Principal of the College and on November 25 of the same year a prospectus was issued, the establishment being fixed at a Principal, a Headmaster, an Architectural Drawing Master and two Indian Teachers. The prospectus provided for three departments in the College. The First Department was for candidates for appointment as Sub-Assistant Civil Engineers. It was laid down that they must be under 22 years of age, must be able to read and write English easily and must have a knowledge of Geometry, Algebra, Mensuration, Plane and Spherical Trigonometry, Conic Sections, and Mechanics. The number to be admitted was 8 annually. The Second Department was for European Non commissioned Officers and

*Father of Sir Edward Maclagan late Governor of the Punjab.

soldiers who had to pass an elementary test in Reading Writing, simple Drawing and very easy Mathematics before admission. The number of admissions was limited to 10 annually. These soldiers were trained to become Overseers in the Public Works Department. The Third Department was for young Indians desiring free instruction in Surveying, Levelling and Drawing. These men were required to have some knowledge of Arithmetic and to be able to read and write Urdu. Admissions were limited to 16 annually and qualified men were given certificates on leaving the College. Annual examinations were held for all classes. It will be noticed that the lengths of the courses were not specified, but it is believed that the Second Department course lasted 6 months only.

When Lieutenant R. Michagan was appointed Principal in October 1847 not only were there no students, but there was no College. The first students were admitted on January 1 1848 by the transfer of a few young Indians who were being instructed by Major W. E. Baker of the Bengal Engineers then Director of the Ganges Canal. These men apparently joined the Third Department. By August 1848, ten non-commissioned officers and soldiers had joined the Second Department, which was then complete, but meanwhile, as no building was available, work was carried on in tents. A very small building, the forerunner of the present Thomason College, was built for use during the hot weather of 1848 and was demolished later, when better accommodation was provided in the new College buildings. This little building contained two classrooms ($26' \times 32'$), a Principal's Office 20×23 , a hall of the same size and four small verandah corner rooms ($16' \times 12'$) for the Headmaster, Drawing Master, Book Depot, and Store, with verandahs on all sides. A plan of this miniature College—known then as the Roorkee College—hangs in the Thomason College corridor. The site of the building is unknown, but

presumably it was near the site of the existing College, possibly where the Principal's residence now stands. Instructional work was interrupted, in the winter of 1848-49, by the Second Punjab War, when Lieutenant MacLagan and the military students were absent on service for about two months, or, as it was tersely put, 'Marched for the frontier.'

The year 1848 was an important one in the history of Roorkee. In this year, 12 years after the first line of the Ganges Canal levels had been taken, Lord Hardinge then Governor-General, recommended the commencement of work on the Canal scheme with the utmost vigour and the Ganges Canal may be said to originate from that time. The Canal Foundry Workshops were also established at Roorkee by Major Allen of the Bengal Army in that year and students of the Roorkee College attended there for practical instruction. In 1850, the number of Military students admitted to the College was increased to 15 annually and on April 7, 1851, there were 50 students of all classes. Forty-two men had already passed out.

The year 1851 really marks the birth of the Thomason College as it now is. At the end of the Second Punjab War, the Roorkee College, with its then existing establishment and accommodation was barely adequate for the instruction of the students and was utterly inadequate to meet the exigencies of the occasion. Mr. Thomason at once grasped the situation and prepared a scheme for enlargement.

This scheme provided for —

- 1st—The admission of officers, both of the Royal and East India Company's armies, to study at Roorkee in a class called the Senior Department.
- 2nd—The superintendence and improvement of the village schools around Roorkee as feeders for the Third or Indian Department of the College.

3rd—The establishment, in connexion with the College, of a Depot for Mathematical and Scientific instruments and of a workshop for their repair and manufacture

4th—The formation of a Museum of Economic Geology

5th—The erection of an Observatory for instruction.

6th—The maintenance of metal and stone printing presses with a book binder's establishment and all the necessaries for the publication of scientific works with appropriate drawings and illustrations.

7th—The enlargement of the College buildings and establishment to meet all these purposes

8th—The doubling of the number of students in the Second and Third Departments

The original cost of the College buildings, etc., was estimated at Rs 1,56 217 and the annual charge for the College at Rs 83,898

A valuable record of the origin of the Thomason College and the aims and objects for which it was established, is to be found in a pamphlet, dated October 3, 1851, drawn up by Mr Thomason, Lieutenant-Governor of the North-West Provinces. The exact date of the commencement of the construction of the new College—afterwards called the Thomason College—is unknown, but it seems that the work must have been started in 1852. The officer who designed the main building was Lieutenant Price of the 1st Fusiliers, then employed on the Ganges Canal, who later became Chief Engineer, Hyderabad. There is reason to believe that Lieutenant Price also supervised the work of construction, *vide* Frontispiece, Volume III, of Colonel Cautley's Report on the Ganges Canal. It is very remarkable that a junior Infantry Officer should have been capable of designing and building so large an edifice

as the Thomason College and producing an example of Renaissance architecture which seems to be not unpleasing even to the eyes of professional architects, who have visited Roorkee in modern times. The officers responsible for the selection and acquisition of the site for the Thomason College and its estate showed wonderful judgment and foresight. They acquired in time 365 acres of land including the high ground on which the College itself was built facing the north, in which direction the main range of the Himalayas towers in snowy grandeur above the nearer hills and lesser ranges. The land was fertile, the water supply ample and the locality healthy, while, within a mile or two some of the greatest engineering works in the world were in the process of construction. It is recorded that the construction of the College was nearing completion in 1854 and that all the original buildings including the main building were completed in January, 1856 so that a period of about four years was required for the work. The front of the main building, viewed from the north was as it is at the present day except that there was no clock but there were no rooms where the present Library and Convocation Hall exist—only covered passages—and the rear of the quadrangle was open except for a small model room and museum block in the centre. As time went on the College was enlarged. By 1873 the Library and Convocation Hall had been built and by 1896 the rear of the College had been closed by providing rooms for Science Departments while still later a second storey was added over the south east corner to accommodate the Photo, School of the College Press. Nevertheless it can be said that the Thomason College was completed as then required, in January 1856, though the site had not the beautiful trees which now provide welcome shade around its lawns and gardens.

Until the year 1854 the institution at Roorkee continued to be known as the 'Roorkee College,' but in that year the

Honourable Court of Directors instituted a scholarship to be called the Thomason Scholarship, in memory of Mr Thomason and the Governor General ordered the Roorkee College to be called the "Thomason College of Civil Engineering" in the following notification

No 6
OUR GOVERNOR GENERAL OF INDIA
IN COUNCIL

PUBLIC DEPARTMENT,
London February 8 1851

- 1 We entirely concur in the opinion you express that it becomes the Government of India to institute some enduring memorial of the eminent merits and services of Mr Thomason and we think that the object cannot be accomplished in a more appropriate manner than by connecting it with the

Letter, dated November 4 No 80 of 1853 submitting for Court's sanction a proposal for the foundation of a scholarship or prize at the Roorkee College in memory of the late Mr Thomason

College of Civil Engineering at Roorkee

- 2 We approve the proposal you have submitted to us and authorize you to carry it out in such a way as may seem to you most suitable At the same time we are of the opinion that the opportunity should be taken of marking our sense of Mr Thomason's public services and of connecting his memory with Roorkee College in a still more emphatic manner It appears to us very fitting that an institution of such peculiar importance to India and of a character so entirely novel in that country should bear the name of its founder and it is accordingly our desire that *the College be henceforth designated the Thomason College of Civil Engineering at Roorkee*

- 3 We direct that this change of name and the reasons for it be publicly notified in such form as you deem most suitable

We are etc
(Sd) RUSSELL ELLICE
J OLIPHANT
and other Directors

In 1856, when the Thomson College had been built, a Committee was appointed by the Lieut Governor to inquire into the past working and present condition of the College and to prepare a scheme for its extension to meet the demands of the Services. The recommendations of this Committee, most of which were approved in November, 1857, were not put into force at that time owing to the disorganization caused by the Indian Mutiny, but the more important alterations were carried out during the next year or two. These were as follows —

1 A fixed date was introduced for admission to the Senior Department (Commissioned Officers) and the number for this department was fixed at 16

2 First Department —The non stipendiary students were now styled the *English Class* and their number fixed at 10. A general educational test was prescribed in addition to the mathematical test at the entrance examination. The stipendiary students were termed the *Native Class* and an entrance test similar to that for the English Class was exacted. Students of the First and Senior departments were eligible for appointment as Probationary Assistant Engineers.

3 Second Department —*Military Class* —The number of students was fixed at 30. The course however, was only for one year against two in the other departments.

Non Military Class —No alterations were proposed for this Class, but Indian students were now admitted.

4 Third Department —*Vernacular* —Various alterations in the syllabus and the requirement of a knowledge of English were prescribed for this department.

5 An evening class for Indian workmen in Drawing, Geometry and Estimating was started.

6 A Professor of Surveying was added to the staff, who was made Curator of the Instrument Depot, also a Professor of Practical Chemistry and Photography.

7 A College Museum was started, with models from England

8 An Observatory was sanctioned

9 A Gymnasium was sanctioned but was not provided till later

10 A soldiers' garden and the grounds generally were laid out and improved

11 The Press was reorganized and enlarged

12 The young officers and non commissioned officers and privates of the Sappers, stationed at Roorkee were required to attend the College as far as their duties would admit

Colonel R Maclagan R E , the first Principal, retired in 1860, being succeeded by Captain E C S Williams, R E , who, in turn was succeeded by Major J G Medley, R E , in 1863 The latter held the post of Principal till 1870 For a few years there were no great changes but the College was expanding steadily In 1863, when the number of students had risen to 88, a Professor of Experimental Science was appointed In 1864, the College was affiliated (nominally) to the Calcutta University The course for the Senior and First Departments was extended to three years, unless a higher certificate was gained in two years Eight students were guaranteed appointments as Assistant Engineers and practically all officers from the Senior Department obtained employment Second Department students still remained only one year in the College and passed into the Public Works Department, Military students as 1st Grade, English Civilians as 1st or 2nd Grade and Indians as 3rd Grade In 1866, a Mistry Class was formed and also an Officers' Surveying Class for a 7 months' course in Military Surveying, Drawing and Field Engineering In 1868, an Indian Military Class (3rd Department) joined the College for a 2 years' course The names of the various classes were altered in 1870 by which time there were 231 students The Senior Department became the

"*Engineer Class*" (Military and Civil), while the Second Department became the "*Upper Subordinate Class*," and the Third Department the "*Lower Subordinate Class*." By 1870, the Staff had greatly increased and consisted of a Principal, two Assistant Principals, a Professor of Experimental Science and a Professor of Drawing. These officers were assisted by a staff of masters for the Upper Subordinate Class under a Head Master and another staff for the Lower Subordinate Class. The increase in the number of students and in the strength of the staff, between the years 1863 and 1870 was remarkable. By 1870, the Thomason College had become a large and important institution, but very few Indians of good education entered it; indeed, between 1847 and 1873 only 17 Indians passed out from the Engineer Class or its equivalent, the remainder being Europeans.

Major A. M. Lang, R. E. replaced Colonel J. G. Medley, R. E., as Principal in 1871, and in the following year the Upper Subordinate Class course—up to then lasting one year only—was extended to two years. In 1873, the Central Instrument Dépôt, located in the College, was transferred to the Canal Foundry and Workshops and a new Class for instruction of men of the Guides Corps in Surveying and Drawing was started. About the year 1873, it became apparent that at last the more highly educated Indians had begun to realize the advantages of the Engineer Class, in which they could obtain an excellent education *gratis* with the chance of a provision for life in a well paid and honourable profession. This is shown by the fact that, between 1873 and 1875, sixteen Indians passed out of the Civil Engineer Class.

The history of the College, since its establishment, may be said to be divided into four periods and the year 1875 marked the close of the first period. The chief characteristic of this period was the pecuniary aid given by the Government to most students in the way of stipends. It

in an untrodden country and Government had to bear the cost of the journey. But it was also a period of great industrial development and of great activity in the construction of rail ways, canals, roads and other aids to industrial enterprise. The public mind was opening to the benefits of public works and to the advantages of Engineering as a profession. The result was that in 1875 Government found it possible to restrict the financial help previously given to students and to limit the number of guaranteed appointments to the Public Service. The years 1875 to 1896 may be termed the second period. During these years, though the pecuniary aid given to students was to a large extent done away with, most of them paid practically nothing for their education. The training, however, was confined chiefly to Civil Engineering, Surveying and allied branches and technical or industrial classes did not exist. The years 1896 to 1920 may be called the third period when all students except soldiers, paid fees, and the College was developed greatly as a Technical Institute, much stress being laid on Industries and Science. From the year 1920 to modern times may be considered as the fourth period when the College reverted once more to the specialized training of Civil Engineers and subordinates, relinquishing Industrial and Mechanical and Electrical classes, which were found to interfere with the more advanced training in Civil Engineering necessitated by modern conditions and were unsatisfactory in a non Industrial centre such as Roorkee.

The Royal Indian Engineering College at Cooper's Hill in England, which opened in 1871 and closed in 1906, had an unfortunate effect on the entry of students to the Engineer Class at Roorkee after 1876. While 55 admissions to this class were made in 1876, only twenty were made in 1878, but the effect of Cooper's Hill College decreased later when more Indians appeared as candidates for entry. An entrance examination fee of Rs. 20 was required for the first time in 1876.

In 1878, Major A M Brandreth, R E , succeeded Colonel A M Lang, R E , as Principal In 1881 the Guides Corps Class was thrown open to the whole Indian Army and was called the Native Military Survey Class In this year also, for the first time, marks were allotted for physical fitness and for proficiency in athletics From the commencement of 1882 the entire financial responsibility for the College was thrown on the Local Government Under orders of the Secretary of State no Europeans except Royal Engineers were to be appointed as engineers in India, except under his sanction, it being understood that Cooper's Hill College was to be the source whence they were to be recruited Indians of pure Asiatic descent were to be given all vacancies in the Public Works Department irrespective of the position they held after the final examination European competitors only receiving, under special sanction appointments for which Indians were unable to qualify This provision was altered in 1886 when guaranteed appointments were thrown open to all Statutory Natives of India The Professorship of Experimental Science was abolished and considerable reductions made in the staff, due probably to an anticipated permanent reduction in the number of Engineer Class students

Few events of importance seem to have occurred in the Thomason College between the years 1882 and 1894 except the abolition of the Military Section of the Lower Subordinate Class in 1885 the starting of a British Military Survey Class in 1888 and some changes in the Staff Colonel A M Brandreth R E , retired in 1891 being succeeded as Principal by Colonel F D M Brown, V C of the Indian Staff Corps, but the latter officer vacated in 1892 when Major J Clibborn became Principal The year 1894 however, is notable for the fact that in that year the last men for many years passed out of the Engineer Class into the Imperial Service The Provincial Service was formed and the

Thomason College having been a provincial institution since 1882, all men from the Engineer Class entered the Provincial Service from 1894. This must have affected the entry to the College. In 1895, educational qualifying tests were introduced for permission to sit for the entrance examinations.

In 1896 commenced the third period in the history of the College. The Lieutenant Governor of the North-West Provinces visited the institution. The College was reorganized and from this time forward all students, except soldiers, paid fees for their education. This further extension of the commercial principle, far from injuriously affecting the College, added to its efficiency and activity. The number of applicants for admission exceeded the number who could be accommodated and it became necessary to insist on a process of selection, whereby only those who stood highest in the competitive examination could be admitted. From this time forth the College did not alone concern itself with the education of engineers and their subordinates: its scope was extended so as to include Industrial and Technical education generally, the aim being to develop the College into a Technical Institute for the Provinces, which should control, stimulate and inspire technical teaching of all kinds.

The main points of this reorganization were:

Firstly—The transfer of the administration of the College from the control of the Public Works Department to that of the Education Department—thus emphasizing the fact that the College was not only intended as a nursery for the Public Works Department, but also to supply the need for Technical education for the Provinces in general.

Secondly—The extension of the course of students in the Engineer Class from two to three years, in addition to an apprentice year in the Public Works Department as Engineer students before they were appointed Assistant Engineers. These, however, were not the only points of interest in the

reorganization scheme. An era of great activity and expansion was inaugurated. A Committee of Management was appointed and the College was affiliated to the Allahabad University. The first revised entrance examination, applicable to both English and Indian students, was held. A class was formed for Mechanical Apprentices having a three year practical course in the Workshops combined with theoretical education. An Industrial Class was started, this had also a three-year course, divided into 15 sections including Press work, Lithography, Photo Mechanical Processes and Art Handicrafts. Students could take up one or more of these sections according to their capabilities. The affiliation to the Allahabad University, though nominally effected was never actually completed and in time it died a natural death as did the affiliation to Calcutta University in 1861. It is evident that the development of the College into a Technical Institute was started with the greatest vigour under the control of the Education Department. The Thomason College became an educational institute under that Department and all important matters had to be referred to the Committee of Management, which became later the Advisory Council. In 1896 a clock was presented by H. E. Sir Bir Shumsher Jung, K. C. S. I., at a cost of Rs. 2,500 and placed on the College dome.

The next few years showed the progress of the College as a Technical Institute. The Technical and Scientific side was greatly strengthened while the Civil Engineering side seems to have remained as before. In 1897 two Professors, two Instructors and a Demonstrator were appointed to the Staff, viz. a Professor of Mathematics (Mr. Tipple) and of Experimental Science (Mr. Sedgwick), an Instructor in Applied Science, a Technical Instructor and a Laboratory Demonstrator. A Chemical Laboratory was started. New Technical Workshops were sanctioned. In 1899 an Electrical Engineering Class was started. In 1901 the new Techni

equipped with the latest machinery run by electricity, were built at a cost of Rs 33,000. The Applied Science Laboratories were fully equipped. A Physical and Mechanical Laboratory was provided. The College Press was enlarged and remodelled and an electrically operated water supply system for the whole College was installed. Before the completion of all these alterations and additions which were necessary to carry out the details of the reorganization scheme of 1896, Colonel J. Chibborn, C I E, I S C went on furlough pending retirement in 1901 and his duties as Principal were taken over by Captain E H deV Atkinson, R E, who remained Principal from 1902 to 1915 when he left the College (as Lieut Colonel Atkinson C I E, R E) to proceed on active service during the Great War. A Council was created in 1901 to assist the Principal in regulating the courses of study and other matters which were recognized as outside the province of the Committee of Management. A sub-committee of this Council now called the *Board of Studies*, still performs these duties though the Council itself has ceased to exist. The enlargement of the Thomason College between the years 1896 and 1900 may be judged by the facts that the number of classes increased from 8 to 25, the number of students from 185 to 324, the fees from Rs 4,121 to Rs 16,784 and yet the yearly cost of the entire management fell from Rs 1,48,261 to Rs 1,32,064. These facts were pointed out by Sir A P MacDonnell, Lieutenant Governor, in a speech delivered at Roorkee on November 6, 1900, when he added that it was the object of Government to develop the Thomason College into a Technical Institute for the North West Provinces and Oudh, which should control, stimulate and inspire technical teaching of all kinds. Experience, however, showed later that advanced technical instruction was not easy at Roorkee and could not be given there except at the expense of higher civil engineering instruction. The

Thomason College, with its 25 classes, was becoming very complicated though such expansion may have been expedient under the industrial and technical conditions then obtaining

Captain Atkinson R E, in 1902, set about the reorganization of the interior economy of the College. Fortnightly examinations—a trial both to the staff and students—were abolished. The session was for the first time divided into three terms and the examinations grouped together at the end of each term. A new time-table was introduced and the allotment of marks re arranged. The length of each attendance, which had so far been invariably 3 hours was changed to 1½ hours, except for certain subjects such as Laboratory work and Drawing. The arrangement of the staff was altered. Each branch of study was placed under a Professor with assistants who were responsible for the teaching of that branch throughout the College. A Dairy was started in connexion with the College stores which had been founded by the staff and students. In July the College was visited by the Lieutenant Governor, Sir Digges LaTouche and as a result of his inspection, a number of much needed buildings were sanctioned. In the early part of 1903 most of these buildings were completed. They included a building for the stores and dairy, a bazar, a central power house, improvements to the quarters, new latrines, the completion of the system of drainage and a house for the Applied Science Instructor. A grant of Rs 24 000 was sanctioned, to be spread over four years, for bringing the supply of surveying instruments in the College up to date. In 1904, further improvements in interior economy were made. The syllabuses for all the classes were revised and brought up to date. The list of text books in use was revised and recent and more approved methods of instruction in Geometry and Mechanics introduced. A start was made to equip a Mechanical Laboratory for the practical teaching of Mechanics. Instead of specified text books for

the Entrance examination of the Civil Engineer Class, a brief Syllabus was prepared for each subject and published in the Circulars. A Survey Class for Indian Officers of the Imperial Service Troops was held for the first time. The Mechanical Apprentice Class which was started in 1896, was placed on a more practical basis, an entrance examination introduced, and the course altered to three years at College and two years as Indentured Apprentices in outside workshops. The rules for the Draughtsman and Computer Class were altered and an examination in Drawing was held for men who had passed the Lower Subordinate Class Entrance examination but failed to obtain vacancies. Mr P. P. Philips Ph.D., joined the staff as Instructor in Chemistry in 1904. The College Press was reorganized, the Typographic branch being reduced and the Lithographic branch developed. The terms of admission to the Industrial Apprentice Class were altered, the payment of scholarships in special cases being substituted for stipends. The College had indeed entered upon an era of strenuous reorganization and expansion.

On April 8, 1905, H. E. the Viceroy, Lord Curzon, inspected the Thomason College and on March 7, 1906 the College was greatly honoured by a brief visit from Her Royal Highness, the Princess of Wales (now Her Majesty Queen Mary), who afterwards presented portraits of H. R. H. the Prince of Wales and herself to the College. The Lieutenant Governor—Sir J. J. D. LaTouche—visited the College during 1905. A Professor of Surveying and Drawing and a Demonstrator in Chemistry were added to the staff in 1905 and Mr A. M. McLean joined the staff as an Instructor in Mechanical Engineering in 1906. In the year 1907, a large scheme for the further development of the College as a Technical Institute was sanctioned. The Lieutenant Governor at that time—Sir John Hewett—was greatly interested in industrial and technical education. An electric light, fan and

telephone system was installed in the College main building, the Workshops and the Principal's residence. New engines of ample power were laid down. A Technical Class was started and the Mechanical Apprentice Class enlarged. To meet these increases additional hostel accommodation was built, the workshops doubled in size, new classrooms built, additional staff entertained and a new water supply inaugurated and last but not least new laboratories for the College sanctioned at a cost of Rs. 91,000. In the following year (1908), the buildings sanctioned in the expansion scheme were practically finished and the new engines and water works installed. An Automobile Driver Class was started and good progress was made at first in training drivers. The Calcott Reilly Memorial Fund from the late Cooper's Hill College was handed over to the College to be given for Applied Mechanics in the Civil Engineer Class. Mr. C. J. Veale joined the College Staff in 1908 as Professor of Surveying and Drawing. The new accommodation for the Photo-Mechanical Department (the College Press) was completed in 1909 and in this year the late expansion of the Professorial staff necessitated a scheme to provide new and better staff bungalows. A site in the vicinity of Malikpur village was acquired and the village removed to Khanjarpur. Mr. P. P. Phillips, who was appointed on five years' contract, was taken into the Indian Educational Service. In October 1909 His Honour the Lieutenant Governor, Sir John Hewett, visited the College and opened the new laboratories, additions to workshops and the electrical and power installations and a new double storeyed hostel. A sub-committee of the College Council was formed into a *Board of Studies* to advise on all matters connected with courses, examinations and time tables. In 1910 the Technical Class was abolished and arrangements made to form a Department of Technology. Major H. B. D. Campbell, R.E. (Assistant Military Principal), left the College in which he

had served since 1897 and was replaced by Captain E W C Sandes, R E , who joined as Professor of Civil Engineering on the abolition of the post of Assistant Military Principal. Mr H P Jordan also joined as Professor of Mechanical Engineering. An elaborate educational plant of cotton machinery was installed in the College workshops, with an expert instructor in charge of the Cotton Class. Five houses were built in 1910 and 1911 for College professors on the Malikpur estate, though not taken into use till late in 1912. A Department of Technology was formed on revised lines to consist of (1) a Higher Division, (2) a Lower Division (Mechanical Apprentice Class), (3) an Automobile Driver Class. Marks, throughout the College, were rearranged and few papers were valued at less than 100 marks. Special grants were assigned for survey equipment and Workshops equipment.

A large Textile Department building was built in the Workshops enclosure in 1911 and 1912. All the cotton machinery was erected in it. This is the building—now outside the Workshops enclosure—which was converted later for use by the Overseer Class and staff as classrooms and offices and known as the Overseer Class Annexe. The Automobile Driver Class was transferred to Lucknow. This transfer marked the beginning of the gradual diminution of all Technical and Industrial classes in the Thomason College and its reversion from a Technical Institute into a purely civil engineering institution as it is today. In 1913 nine Anglo Indian students joined the Textile (Cotton Spinning and Weaving) Class, but the Class *did not seem to be a success*. After a few years admissions it ceased at Roorkee and later the cotton machinery was transferred elsewhere. In 1914 admissions to the higher division of the Department of Technology at Roorkee ceased, and the lower division (the Mechanical Apprentice Class) was transferred to Lucknow, so that both

these classes soon ceased to exist in the College. These changes marked a further step in the reversion of the College to a civil engineering institution though, in 1914, a Mechanical and Electrical Engineer Class was started and was maintained for a time. In 1913 the Public Services Commission, under Lord I-lington, visited the College. There were no other events of much importance in the College in the years 1913 and 1914. The institution developed gradually in different ways, but in a calm and peaceful atmosphere rudely broken in August, 1914, by the world wide catastrophe of the declaration of War.

When the Great War commenced the College was in vacation, but in October 1914, when it re-opened, great enthusiasm and patriotism were shown by the staff and students who subscribed Rs 2 500 towards the Imperial Relief Fund and followed daily the progress of the war on maps hung in the College corridor. Mr B M Mukerjee, Professor of Physics volunteered in 1914 for service in the X Ray section of the General Hospital and left for active service in the Western theatre, not returning until 1920. Captain E W C Sanders, R E , proceeded on active service to Mesopotamia in March, 1915. The Principal Lieut Col E H deV. Atkinson, C I E , R E , proceeded to England in July, 1915, where he was appointed C R E of a Division and rose to be *Chief Engineer of the 4th Army on the Western Front* before the end of the war with the rank of Major General and many decorations. Mr D F Tipple officiated as Principal till October, 1916, in his absence. Mr H P Jordan, Professor of Mechanical Engineering, and Mr A M McLean, Instructor in the same Department, obtained commissions in the Indian Army Reserve of Officers and left for military service in May, 1915 and August 1915, respectively, Mr Jordan returning invalided, in October, 1915, and Mr (now Major) McLean, M C , in 1920 after service in Mesopotamia and staff

employment in India. Mr E S Griffith, an Instructor, obtained an I A R O commission in May, 1917 and Mr G Lacey, who joined the College as Professor of Civil Engineering in November, 1915, also obtained a commission in 1917 and both left the College. Many European students, who had passed out of the College, received commissions, and the names of those students killed in the War appear on a brass memorial tablet in the College. It is evident that the War took a heavy toll of the College Staff and instruction became increasingly difficult. Funds were also scarce, so that any large expansions had to be postponed till better times. Nevertheless the instructional work continued. The Public Works Department assisted the College by recommending the appointment as Principal of Mr W Gunnell Wood, C S I, late Chief Engineer, Buildings and Roads Branch, United Provinces and this appointment was made in October, 1916. Sir James Meston, Lieut Governor, visited the College in February, 1916.

The Public Works Reorganization Committee visited the Thomason College in 1917 and in July of that year His Honor, the Lieut Governor of the United Provinces, Sir James Meston presided at the Annual Convocation. The Indian Defence Force came into existence, replacing the Mussoorie Volunteer Rifles, and all British subjects in the College were enrolled in the new formation. Admissions to the Textile Class ceased in 1918, but the class was not transferred finally to Cawnpore till January, 1920. The declaration of the Armistice was duly celebrated in November, 1918 and the College settled down to consolidate its position in the difficult times which succeeded the War, when political unrest in certain districts and lack of funds for new schemes, rendered the task of Government no easy one. Mr E F Tipple, Professor of Mathematics, vacated his post in April, 1919, after

22 years service at the College during which he twice officiated as Principal. In February 1920 Major L W C Sandes D S O , M C , R E , rejoined the College Staff from leave after the War as a Professor of Civil Engineering and subsequently officiated as Principal for several months during the absence on leave of Mr W G Wood C S I. During 1920 and 1921 the College suffered heavily through the deaths of Mr F W Sedgwick Professor of Electrical Engineering and Physics who had served on the College Staff for 23 years and Sub-Conductor G E Lansley Personal Assistant to the Principal, on March 22 1920 and October 6 1921 respectively. Mr W L Stampe I S E was appointed as a second Professor of Civil Engineering in November 1920 and Mr J M Salisbury Trelawny as a third Professor in October 1921. There were many changes in the superior staff at this time due to the altered conditions after the close of the War and the retirement of officers who had carried on the work ably during the War.

It is not proposed in this history to deal with changes of staff other than professorial staff except in unique cases and as regards professors merely to mention the times of their first appointments and dates on which they vacated their posts finally. Officiating appointments and those owing to leave vacancies are too numerous and would make the history unwieldy. Reference to the Annual Report at the end of the Calendar of any year will show in detail the changes in the staff during that year. For easy reference a list of Principals follows this History in the Calendar and also a list of Convocation Presidents i.e., officers who presided at the Annual Convocations and Prize givings. A further list of very distinguished visitors is added. Many other senior officials have also visited and continue to visit the College, the Annual Report of each year shows their names and, needless to say, the College welcomes such indications of their interest in it.

A complete Reorganization Scheme for the Staff of the Thomason College, dated July 12, 1919, was drawn up in that year by the Committee of Management of the College to suit the new requirements of Government under the Reforms Scheme and the new policy laid down for the future of the College and it was duly submitted to the Secretary of State. The scheme was necessitated by the proposal to close down certain classes in the College as mentioned hereafter. The Committee of Management proposed certain modifications of the original scheme in May, 1920 and final sanction to the amended scheme was accorded by the Secretary of State on January 29, 1922. After 1920, admissions to the Upper Subordinate Lower Subordinate, Industrial Apprentice and Mechanical and Electrical Engineer Classes ceased. It had been decided finally that the training of Mechanical and Electrical specialist students and Industrial and Technical students was not suited to Roorkee and this decision marked the end of the scheme to develop the Thomason College as a Technical Institute. The cessation of recruitment to the Upper and Lower Subordinate Classes and the consequent disappearance of the last students of these classes in July, 1922, was brought about by changes in the organization of the Public Works Department under which many sub divisions were to be in the charge of Assistant Engineers (Provincial Service) instead of Upper Subordinates. This scheme made it advisable to train sub overseers to a standard higher than the Lower Subordinate Class recruits for the new Subordinate Engineering Service. Hence, when the Upper Subordinate and Lower Subordinate Classes were to be abolished in the College, a scheme was prepared to replace them by a new Overseer Class of intermediate standard. The new Overseer Class was approved and the first students were admitted in October, 1922, for a 3 years' course, 40 vacancies being offered annually for com-

petition This 3 years' course was later reduced to 2 years. The former Lower Subordinate Class Staff was transferred to the Overseer Class, but later the instruction was supervised and assisted also by the Lecturers of the Civil Engineer Class. It was originally intended that the Overseer Class should be located at Roorkee only until buildings were ready at Lucknow to accommodate it. The last students of the Mechanical and Electrical Engineer Class and the Industrial Apprentice Class passed out of the College in July, 1923, but a class for Draftsmen was retained and still exists. A batch of 20 Military students was admitted to the College in January 1922, as a special case to meet the requirements of the Military Engineer Services (old M W S) for a short course of training approximating to that of the abolished Upper Subordinate Class with due regard to the shorter duration. This batch left the College in July, 1923. A second batch of ten Military students only was admitted in October 1922 and passed out in July, 1924 and with that batch the class ceased to exist in the Thomason College and all College students up to July, 1935 have been civilians. Since October, 1935 3 Indian Military Academy Gentlemen Cadets are to be admitted to the Civil Engineer class annually after they have passed the entrance examination to undergo a course of post graduate training corresponding to that of Cambridge with a view to their obtaining Commissions in the Indian Engineers.

In the year 1921 the College Committee of Management was replaced by an *Advisory Council*, constituted under G O No 1573/XV—312, dated July 10, 1920. The last meeting of the Committee of Management (45th) was held on July 9 1920 and the first meeting of the Advisory Council on February 17, 1921. The Council was formed with 10 members as compared with 7 members constituting the Committee, but the number of members in the Council has since increased the status of the Thomason College was

improved owing to the Government of India offering to the Civil Engineer Class 10 or 9 vacancies in alternate years, in the Indian Service of Engineers as *guaranteed appointments*. This step by which employment in the Imperial Service was again thrown open to highly qualified students, was a return to the practice in vogue up to 1894, when students could pass into that Service. The constitution of the Indian Defence Force was changed in 1921 to the Auxiliary Force (India) and the College detachment (Europeans) became a part of the Mussoorie Battalion being organized as a Machine Gun Section. An increased accommodation for professors was required one thatched bungalow almost opposite the Royal Engineers' Mess was replaced by a pukka building in 1920 and in 1921 the construction of a pukka bungalow was commenced opposite the Royal Engineers' Mess and another further east. In October 1921, Mr W G Wood C S I vacated the post of Principal and was succeeded by Major E W C Sandes D S O , M C , R E.

His Excellency the Governor of the United Provinces Sir Harcourt Butler, K C S I C I E presided at the College Convocation and Prize giving in July 1922. In this year a Committee was appointed by Government to inspect the College Press with a view to possible economies through the transfer of the control of the Press to the Superintendent of the Government Press, Allahabad (then Mr Abely). Though the Committee recommended the transfer, the Advisory Council was averse to it and Government accepted the opinion of the Council. The two new bungalows for professors were completed in 1922 and funds were given for the transfer of the Textile (Cotton) Machinery to Cawnpore and the conversion of the Textile Building into an Annex for the Overseer Class instruction. The benefits of the sanctioned Reorganization Scheme were felt in this year. All members of the instructional staff were allowed rent free quarters from October

1922 and salaries were improved. Mr H P Jordan Professor of Mechanical Engineering, then on leave was transferred to the Ikon Engineering College in October 1922. Mr Dhillon, Mr Raja Ram, Mr B D Puri, and Mr Shiv Narayan joined the Staff as Professors of Civil Engineering (Railways), Civil Engineering (Sanitary), Mathematics and Electrical Engineering and Physics respectively, also Mr Chuckerbutty as Assistant Professor of Surveying and Drawing. But Mr Shiv Narayan and Mr Chuckerbutty were transferred elsewhere after one session and the posts remained vacant and Mr Dhawan also left in October 1923.

His Excellency Sir William Marris K C S I K C I E who succeeded Sir Harcourt Butler as Governor presided at the Convocation in July 1923. This occasion was unique in that the Governor of the Punjab His Excellency Sir Edward Maclagan K C S I C I E was also present and distributed the prizes at the request of Sir William Marris. Sir Edward Maclagan had been invited in view of his connexion with the College through his father Colonel R Maclagan R E who was the first Principal. A portrait of Colonel Maclagan presented by His Excellency Sir Edward Maclagan in commemoration of his visit hangs in the Convocation Hall. Mr C J Veale Professor of Surveying and Drawing officiated as Principal for a period of six months in 1923 (including the College vacation) in the absence of Major Sandes. In November 1923 sanction was given to the formation of an Platoon of the 3rd (Allahabad) Battalion of the University Training Corps (Indian Territorial Force) at Roorkee thus enabling the Indian students to undergo military training for the first time. Applications for enrolment far exceeded the vacancies and there was great keenness. Unfortunately the strength of one Platoon did not allow of the actual enrolment of more than one half of the Civil Engineer Class students but the remainder received military drill instruction. Th

Overseer Class students continued to receive instruction in physical drill

Major General Sir Edwin Atkinson, K B E , C B , C M G , C I E , Master General of Supply and a former Principal of the College presided at the Convocation in July, 1924 During this year the grant for repairs was increased and much necessary and overdue work was carried out, including re roofing the College bazaar buildings and the completion of new out buildings and the re roofing of servants' quarters Dr P P Phillips on return from leave officiated as Principal from October, 1923 till the return from leave of Major E W C Sandes in October, 1924 A Special Committee was assembled by Government at Roorkee in December, 1924, to investigate certain matters connected with the syllabi courses of study and staff of the College, arising out of the introduction of the Reorganization Scheme of 1919 A very comprehensive report was submitted by this committee in 1925 which was subsequently dealt with, item by item by the Advisory Council whose recommendations caused Government to sanction several useful alterations and innovations in the College courses Mr A C Verrieres, C I E Chief Engineer, Buildings and Roads Branch, Public Works Department, United Provinces, an old student of the College presided at the Convocation in July, 1925, this being the first instance of a past student performing this duty An extension of the Indian Engineer Class Club was put in hand and also several internal alterations in the College itself and in hostels, and re roofing of certain bungalows with jack arches A very fine steel model of a plate girder bridge span, on a large scale, was presented to the College by Messrs Burn & Co , Howrah, and installed in one of the College model rooms which have been developed into useful instructional departments Mr R A Bradshaw Smith, I S E , joined the Staff as Professor of Civil Engineering (Irrigation), in February,

1925, Mr. L. L. Dawson having acted temporarily since Mr W. L. Stampe vacated the post in October, 1924.

The President at the College Convocation in July, 1926, was His Excellency Sir Malcolm Hailey, K. C. S. I., C. I. E., Governor of the Punjab. He was invited to preside because the Punjab had of late years been so largely represented in the College. Indeed the Punjab candidates for the Civil Engineer Class had become as numerous as those from the United Provinces, the Punjab paying the expenses of the training of every such candidate who gained admission, though admissions were limited. The Board of Studies in 1926 formulated proposals for the improvement of the Overseer Class course and instruction. A grant was given by Government for the purchase of additional plant for the College Workshops which lacked modern generating machinery. Two vestibules, one classroom and three offices were re-roofed in the main College building and also certain servants' quarters and small out-houses. Another lecturer's bungalow was re-roofed with jack arches.

The Convocation President in July 1927 was Mr (now Sir) B. D. O. Darley, C. I. E., I. S. E., Chief Engineer Sarda Canal, and Secretary to Government, United Provinces, Public Works Department, Irrigation Branch. Mr Sahg Ram, I. S. E., an old student, joined the Staff in June 1927 as Professor of Civil Engineering. The College was grieved to learn of the death of a distinguished past student, Sir Ganga Ram. During the summer a new flagstaff was erected in front of the College.

This brief history having now been written up to the end of the College Session of 1926-27—a period of 80 years since the foundation of the Thomason College in 1847—it may be well to continue it year by year in the form of a *Sessional Diary* including the *preceding* vacation, i. e., by yearly periods from July 15 to July 15, and this system will henceforth

and the electric supply given to Hardwar and adjacent places. A line was laid also to supply the whole of Roorkee, including the College, part of whose electric current now comes indirectly from its parent, the River Ganges. The new water supply system for the College estate, however, could not be installed as funds were not available. A very large steel model road bridge of Baltimore Truss type, with overhead bracing, was received during 1927 from Messrs Burn and Co, Howrah, and placed in the bridge model room during the Session 1927-28, complete with framed diagrams and calculations. Most of the cost was generously met by the firm. The liquidation of the College Stores was completed. The staff and students of the College learnt with the deepest regret on June 17, 1928, that His Excellency the Governor of the United Provinces, Sir Alexander Muddiman, Kt, KCSI, CIE, had died on that day. His Excellency had undertaken to preside at the Annual Convocation in July, 1928. In consequence of this tragic event, Mr A H Mackenzie, CIE, Director of Public Instruction, United Provinces, presided at the Convocation and distributed the prizes and certificates. This function brought to a close a notable Session—the first since 1905 in which the College had been honoured by a visit from a Viceroy. A silver challenge cup, to be awarded annually to the best student in Games and Sports, was donated to the College by the Principal, Lieut Colonel E W C Sandes and was presented to the first winner at the Convocation, together with a miniature cup. Another silver challenge cup was donated by Mr B D Puri, Professor of Mathematics, for Squash Racquets Doubles, and a third cup by Mr J Barnett, Personal Assistant to the Principal, for the Overseer Class in the Athletic Sports. These cups were also presented at the Convocation. A fourth silver cup, for an annual cross-country race, was promised by Mr R A Bradshaw-Smith, Professor of Civil Engineering, on

leaving the College when reverting to his Department in 1928

Session 1928-29 —The Hon ble Raja Bahadur Kushalpal Singh, the United Provinces Minister for Education presided at the Annual Convocation in July, 1929 Dr P P Phillips officiated as Principal from May 1929 until the end of the session in place of Colonel Sandes who was granted leave During the year funds were provided by Government for the installation of electric light in all the College residential quarters a benefit which was appreciated by all concerned The separate department of Electrical Engineering and Physics was abolished and the instruction in Electrical Engineering transferred to the Mechanical and Electrical section at the Workshops Physics was combined with the work of the Chemistry Department which henceforth will be known as the Department of Applied Science Lieut J S Gurney took charge of the post of Head Master Overseer Class from the beginning of the session

Session 1929-30 —Mr P H Tillard I S F Chief Engineer P W D B & R Branch, U P presided at the Annual Convocation in July 1930 Colonel Sandes proceeded on leave preparatory to retirement with effect from March 7 1930 and Mr P P Phillips was appointed to succeed him as officiating Principal in the first instance

Session 1930-31 —Mr A H Mackenzie C I E Director of Public Instruction United Provinces visited Roorkee from April 8 to 10 and inspected the College Mr W Roche C I E I S E Chief Engineer P W D Irrigation Branch U P presided at the Annual Convocation The European students mess of the Civil Engineer Class had to be closed owing to paucity of members after having been in existence for 34 years Up to the last its members had a very fine record both in work and games

Session 1931 32 —The Retrenchment Committee, appointed by Government for the Thomason College presided over by the Hon'ble Mr J P Srivastava, M Sc , A M S T , M L C , Minister for Education, United Provinces, met in Roorkee from November 12 to 14, 1931 His Highness the Maharaja of Jaipur visited the College in January, 1932, and Major General Addison on July 6 1932

The Photo Mechanical and Litho Department and Book Dépôt ceased to be departments of the College with effect from March 1 1932 The course of instruction in photography was abolished and the last award of medals in photography was made at the convocation on July 14, 1932

Dr P P Phillips Ph D F I C I E S Principal was superannuated with effect from March 22 1932 after serving the Thomason College for 28 years and Mr Raja Ram Professor of Civil Engineering succeeded him as officiating Principal from that date

Mr Gerald Lacey I S E Professor of Civil Engineering, proceeded on leave with effect from April 21, 1932 and reverted to the Irrigation Branch United Provinces, from October 17 1932 and Mr M L Garga Assistant Research Officer Irrigation Branch officiated as Professor of Civil Engineering up to July 15 1932 in his place

Professor Gerald Lacey offered an annual prize of Rs 25 to be awarded to a Civil Engineer Class student for the best performances at the meetings of the Thomsonian Society during each session

Mr C J Veale, F R G S , F R A S , Professor of Surveying and Drawing retired on pension with effect from March 8 1932

Dr M A Hamid Ph D , M Sc , joined as Temporary Professor of Applied Science on October 22, 1931

Lieut Col C A Bird, D S O R E , presided at the annual convocation

Session 1932-33 — Many of the changes ordered by the Government in accordance with the report of the Retrenchment Committee which met in Roorkee from November 12 to 14, 1931 became operative with the start of this session.

The departments in the Civil Engineering Course were reduced from 5 to 3. The Department of Applied Science was abolished, Physics being added to the Department of Pure and Applied Mathematics and Chemistry. Geology and Mineralogy to the Department of Civil Engineering. The Department of Survey and Drawing was amalgamated with the Department of Civil Engineering and its professorship reduced to an assistant professorship.

The changes in the staff were

- (i) Abolition of the post of Professor of Applied Science
- (ii) Abolition of one of the posts of Professor of Civil Engineering thereby reducing the number from 3 to 2
- (iii) Abolition of two posts of Instructors of the Overseer Class reducing the number from 5 to 2
- (iv) Abolition of one of the two posts of Lecturers in Mechanical Engineering
- (v) Abolition of the post of Superintendent of the College Office and combining this post to that of the Personal Assistant to the Principal

Further from the start of this session the Principal in addition to his ordinary duties became head of the Department of Civil Engineering and was called upon to lecture.

Mr H J Amoore I S E became Principal from October 6 1932.

Mr H T Cumming was appointed Assistant Professor of Survey and Drawing from the start of the session and Mr J Crawford ceased to be a lecturer in Mechanical

Engineering, becoming Headmaster of the Overseer Class from the same date relieving Mr H T Cumming

Rai Bahadur Debi Datta Mal, I S E , was appointed Professor of Civil Engineering, joining his appointment in February, 1933 thereby relieving Mr M L Garga, who reverted to his substantive appointment in the Irrigation Branch of the P W D , United Provinces

Raja Jwala Prasad retired Chief Engineer Irrigation Branch P W D U P presided at the Annual Convocation

Session 1933 34 —Major A M McLean, Assistant Professor of Mechanical and Electrical Engineering who joined the staff of this College in October, 1906 left in March, 1934 on leave preparatory to retirement Mr J Crawford, Head Master, Overseer Class, officiated in his place in addition to his own duties

The Hon ble Sir J P Srivastava, Kt M Sc , M L C , Minister for Education United Provinces, presided at the Annual Convocation

Session 1934 35 —Mr H J Amore Principal proceeded on leave out of India from March 15 1935 Professor Mahabir Prasad who joined the College as Professor of Civil Engineering on the forenoon of December 7, 1934, officiated as Principal from March 15, 1935

Mr J Crawford continues to officiate as Assistant Professor, Mechanical and Electrical Engineering

Mr P C Sen Gupta took over charge as officiating Headmaster, Overseer Class on February 11, 1935

Captain J Barnett proceeded on privilege leave from May 13 1935, for 2 months 25 days

Mr P. L Sharma, Lecturer in Drawing, proceeded on leave out of India for 6 months 21 days in continuation of College vacation of 1931, from October 23, 1934, but had to return earlier and resumed charge on December 8 1934

Mr P S Bhatnagar officiated as lecturer in Drawing in his place from October 22 1934 to December 8 1935

A special committee appointed by the Government to report on the revision of syllabus and course of study Civil Engineer class held its sitting in the College on January 6 and 7 1935

Sir Sita Ram President of the Legislative Council, paid a visit to the College on April 26, 1935

Session 1935-36 —Mr W M G Dawson, I S E , joined the Staff as Professor of Civil Engineering in the vacancy caused by Rai Bahadur Debi Datta Mal I S E , reverting upon completion of his term of office to the Irrigation Department United Provinces

Mr W M G Dawson I S E proceeded on leave combined with the College vacation in March 1936 and Mr K N Kathpalia I S E was appointed in his absence to deliver lectures in Hydraulics and Irrigation

In accordance with arrangements made by the Army Headquarters India with the Government of the United Provinces, Indian Commissioned Officers from the Indian Military Academy joined the Civil Engineering class of the College Three officers joined 2nd Lieutenants A N Kashyap N S Bhagat and Anant Singh

Session 1936-37 —Messrs Mahabir Prasad I S E , and W M G Dawson I S E Professors of Civil Engineering reverted to their substantive appointments in the Public Works Department of the United Provinces, on March 15, 1937, and July 7 1937, respectively

Major H Williams R E , joined the Staff on October 8, 1936, being the officer deputed by Army Headquarters Simla, to be in charge of the Indian Commissioned Officers under going a post graduate course in Civil Engineering and Professor of Civil Engineering

Mr Raja Ram on completion of his period of 3 years as Malarial Engineer with the Government of India resumed his post as Professor of Civil Engineering on July 10, 1937

Mr H T Cumming, Assistant Professor of Survey and Drawing, proceeded on leave combined with the 1937 College vacation on April 9, 1937

Mr J Crawford, officiating Assistant Professor of Mechanical and Electrical Engineering, was confirmed in that post from March 28, 1935

Major Barnett Personal Assistant to Principal and Superintendent of the College Office, was away on leave from November 4 24, 1936

Mr M L Misra, Lecturer in Electrical Engineering, was on leave on medical certificate from October 27, 1936 to February 20 1937

Lala Phumman Ram, Instructor, Overseer Class, retired from service from January 4, 1937

Session 1937 38 —Mr Raja Ram, Professor of Sanitary Engineering proceeded on long leave on October 16, 1937 and rejoined on April 18, 1938

Mr Romesh Chandra I E E , joined the staff as Professor of Civil Engineering on October 18, 1937 and reverted to his substantive appointment upon completion of the session

Mr P Chakravarti, Lecturer in Pure and Applied Mathematics, was on leave from April 13, 1938 to May 11, 1938

The Hon'ble Pandit Govind Ballabh Pant, B A , LL B Premier, United Provinces, visited the College on December 2, 1937, and addressed the students

The Hon'ble Mr Pearey Lal Sharma, Minister for Education, United Provinces, visited the College on December 21, 1937, and gave away the prizes at the Annual Sports

Mr R S Weir, Director of Public Instruction United Provinces visited the College in June 1938

At the close of the session passed out the first three Indian Commissioned Officers who joined the College in October 1935 for a 3 years post graduate course in Civil Engineering

Sir William Stanje K1 C I F very kindly presented a challenge cup for Inter-class athletic events This was first awarded and won by the Civil Engineering class 3rd year

Mr Puran Mal retired Assistant Engineer Public Health Department donated a sufficient sum to provide annually 2 silver medals one for the Civil Engineer class and one for the Overseer class The medals to be known as the Puran Mal silver medals for Public Health Engineering The medals to be awarded annually to those students who obtain the highest marks in the final examination on Sanitary Engineering and Water Supply The medals were first awarded at the Convocation in July 1938

Session 1938-39—Mr H J Amore Principal proceeded on leave preparatory to retirement from May 5 1939 and Major C D Reed R F carried on his duties in addition to his own till July 15 1939 and made over charge to Mr B D Puri Professor of Mathematics on July 16 1939

Major H Williams R F Professor of Civil Engineering and officer in charge of Indian Commissioned Officers reverted to Defence Department from November 7 1938 and was succeeded by Major C D Reed R E who also reverted to Defence Department from July 16 1939

Mr Raja Ram Professor of Civil Engineering resigned from May 8 1939

HISTORY

Mr B D Puri, Professor of Mathematics was on leave on medical certificate from January 18, 1939 to April 5, 1939 and Mr P. Chakravarti, Lecturer in Mathematics officiated as Professor of Mathematics during the period

Mr H T Cumming, Assistant Professor of Survey and Drawing was on leave on medical certificate from December 23, 1938 to February 13, 1939 when he was invalided by the Medical Board His duties were carried on by Mr S R Singh, Lecturer in Surveying

Major J Barnett, Personal Assistant to the Principal, retired on March 7, 1939

Mr P Chakravarti, Lecturer in Mathematics proceeded on leave preparatory to retirement from April 6, 1939

Mr P L Sharma, Lecturer in Drawing was on leave from January 27 1939 to February 28, 1939 and his duties were performed by Mr H J Amore, Principal and Major J Barnett, Personal Assistant to the Principal

Mr M L Misra, Lecturer in Electrical Engineering was on leave from October 28, 1938 to December 14, 1938 when he was invalided by the Medical Board

His duties were performed by Lieutenant-Colonel J. Crawford, Assistant Professor of Mechanical and Electrical Engineering and Mr. B L Sharma, Lecturer in Mechanical Engineering

The Hon'ble Sri Sampurnanand, B SC, Minister for Education, United Provinces visited the College on April 11, 1939.

His Excellency Sir Harry Haig, K C S I, C I E, I C S, Governor of the United Provinces accompanied by Lady Haig visited the College on July 15, 1939 and presided at the Annual Convocation

The Defence Department withdrew its Indian Commissioned Officers, who were undergoing post graduate course in this College and along with them their officer-in-charge from the end of this session

A Committee appointed by Government to reorganize this College visited the College on July 7, 8 and 9, 1939

Session 1939-40—Major C D Reed R I , Officiating Principal Professor of Civil Engineering and Instructor Indian Commissioned Officers, was withdrawn by the Military Department and made over charge of the post of Principal to Mr B D Puri, Professor of Mathematics and that of the Professor of Civil Engineering to Mr S R Singh, Lecturer in Surveying on July 16 1939

Rai Bahadur Mool Chand Bijawat, I S E Superintending Engineer, Public Works Department Irrigation Branch joined as Professor of Civil Engineering on October 29 and took over charge of the post of Principal from Mr B D Puri, Professor of Mathematics and that of Professor of Civil Engineering from Mr S R Singh Lecturer in Surveying on the same date

Rai Bahadur Madan Gopal Sardana retired Superintending Engineer of the Public Works Department Irrigation Branch took over charge as Principal from Rai Bahadur Mool Chand Bijawat on January 17 1940

The post of Assistant Professor of Survey and Drawing was converted into that of Assistant Professor of Civil Engineering Mr V G Garde was appointed to it and took over charge from Mr S R Singh Lecturer in Surveying on October 16 1939

Mr Jai Krishna was appointed temporary Lecturer in Civil Engineering from December 1, 1939 to January 16, 1940.

HISTORY

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Mr H T Cumming, Assistant Professor of Survey and Drawing was on leave on medical certificate from December 22, 1938 to February 13, 1939 when he was invalided by the Medical Board His duties were carried on by Mr S R Singh, Lecturer in Surveying

Major J Barnett Personal Assistant to the Principal retired on March 7, 1939

Mr P Chakravarti Lecturer in Mathematics proceeded on leave preparatory to retirement from April 6, 1939

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Mr Jai Krishna was appointed temporary Lecturer in Civil Engineering from December 1 1939 to January 16, 1940

Mr Jai Krishna was appointed Personal Assistant to Principal from January 17, 1940, relieving Mr S R Singh from Personal Assistant to Principal's duties from the same date

Mr Chandra Prakash Mital was appointed temporary Lecturer in Civil Engineering from June 3, 1940 to July 13, 1940

Dr Zaki Uddin Ahmad joined as Lecturer in Electrical Engineering on October 16 1939 relieving Lt Col J Crawford, Assistant Professor of Mechanical and Electrical Engineering and Mr B L Sharma Lecturer in Mechanical Engineering on the same date

His Excellency Sir Maurice Garnier Hallett, K C S I , C I E , I C S , Governor of the United Provinces, visited the College on April 18 1940

Dr Sir Shah Muhammad Suleman Vice Chancellor of the Muslim University Aligarh Judge of the Federal Court visited the College on April 20 1940

Dr Panna Lall, M A , B SC LL B , (Cantab) D LITT (Agra), Bar at Law, C I E , I C S , Adviser to His Excellency the Governor United Provinces, visited the College on July 12 1940

Session 1940 41—Lieut Col C D Reed of the Engineer in Chief's branch visited the College in connexion with the training of B N C Os as Military S D Os

Mr Chatterjee Regional Inspector visited the College in connexion with the training of War technicians in the College Workshops

The last batch of students nominated by the Punjab Government for studying in the Civil Engineer class of this College completed their course this Session

Services of Lieut Col J Crawford, Assistant Professor of Mechanical and Electrical Engineering were placed at the disposal of the Army Department with effect from May 15 1941 and Mr B L Sharma Lecturer in Mechanical Engineering is officiating in his place from the same date

Revised new Syllabus for the Civil Engineer class was introduced from this session

Session 1941-42—The training of British Non Commissioned Officers and War technicians started from July 1941 In connexion with the training of War technicians this College has been made a Civil centre with a strength of 650 War technicians

Colonel Gordon visited the College to see what facilities this college could give for the training of Surveyors and other P W Staff

The post of a permanent lecturer in Civil Engineering was created and Mr Tri Krishna Personal Assistant to Principal was appointed to it

Mr Jagdamba Prasad was appointed officiating lecturer in Mechanical Engineering with effect from January 9 1942

Mr Krishn Chandra Misra was appointed officiating Personal Assistant to Principal with effect from January 10 1942

Two topmost students of the Civil Engineering class were guaranteed appointments in the Provincial Service of Engineers with effect from the year 1942-43 These guaranteed posts were also given to the students who passed out in July 1941

LIST OF PRINCIPALS

Colonel R MacLagan R E	1847—1852
Major Oldfield R E (Offg)	1852—1856
Colonel R MacLagan R E	1856—1860
Captain C E S Williams R E	1860—1862
Colonel J G Medley R E	1863—1871
Colonel A M Lang R E	1871—1877
Colonel A M Brandreth R E	1877—1891
Colonel I D M Brown V C I S C	1891—1892
Lt Col J Chbborn C I E I S C	1892—1902
Lt Col L H deV Atkinson C I E R E	1902—1915
W G Wood Esq C S I	1916—1921
Lt Col L W C Sandes D S O M C R E	1921—1931
Dr P P Phillips Ph D F I C I F S	1931—1932
H J Amore Esq I S E	1932—1939
Rai Bahadur Madan Gopal Sardana	1940—

NOTE.—The ranks shown are those held on vacating the appointment. Officers and principals are omitted from the list but many names appear in the Calendar of 1911 and the names of Mr E F Topley Mr C J Veale Mr Raja Ram Major C D Reed R E Mr B D Luri and R B M C Bajawat may be added for recent years.



G. Lacey, Esq., B.Sc., C.I.E., I.S.E., Chief Engineer, Eastern Canals,
United Provinces

G Lacy r

GIE ISE Chle In
United Provin e

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LIST OF CONVOCAATION PRESIDENTS

FROM 1890

- 1890 The Hon ble Sir Auckland Colvin K C M G , C I E ,
Lieut Governor, N W P
- 1891 Mr T H Wickes, Chief Engineer, P W D , N -W P
- 1892 The Hon'ble Sir Auckland Colvin, K C M G , C I E ,
Lieut Governor, N W P
- 1893 Mr A H Harrington I C S , Commissioner Meerut
Division
- 1894 Mr J G H Glass C I E Chief Engineer, P W D ,
N W P
- 1895 } Principal Thomason College (Lt Col J Clibborn,
to { I S C)
1897 }
- 1898 Offg Principal, Thomason College (Lt H B D
Campbell R E)
- 1899 } Principal, Thomason College (Lt Col J Clibborn,
to { I S C)
1901 }
- 1902 His Honour Sir J J D LaTouche, K C S I ,
Lieut Governor, U P
- 1903 Principal, Thomason College (Major E H deV
Atkinson, R E)
- 1904 Lt Col A E Sandbach, R E 1st Sappers and
Miners, Roorkee
- 1905 Lt Col S V Thornton, R A O C Station, Roorkee
- 1906 } Principal, Thomason College (Major E H deV
to { Atkinson, R E)
1909 }

- 1910 Mr C E V Goument, Chief Engineer, P W D ,
U P
- 1911 }
to } Principal, Thomason College (Lieut Colonel E B
1915 } deV Atkinson C I E , R E)
- 1916 Mr W Gunnell Wood C S I , Chief Engineer,
P W D , U P
- 1917 His Honour Sir James Meston, K C S I , Lieut -
Governor U P
- 1918 Mr F C Rose M I C E Secretary to the Govern-
ment of India P W D
- 1919 Mr T R J Ward C I E M V O Inspector General
of Irrigation in India
- 1920 Colonel Sir S D A Crookshank K C M G C B ,
C I L D S O M V O Secretary to the Gov-
ernment of India, P W D
- 1921 Mr St J Gebbie, C I E Inspector General of
Irrigation in India
- 1922 His Excellency Sir Harcourt Butler K C S I , C I E ,
Governor, U P
- 1923 His Excellency Sir William Marris K C S I ,
K C I E , Governor U P
- 1924 Major General Sir L H deV Atkinson, K B E ,
C B , C M G C I E , Master General of Supply
- 1925 Mr A C Verrières, C I E Chief Engineer, P W D .
U P
- 1926 His Excellency Sir Malcolm Hailey K C S I , C I E .
Governor Punjab
- 1927 Mr B D O Darley, C I E , Chief Engineer Sirir-
Canal, U P
- 1928 Mr A H Mackenzie, C I E , Director of Public In-
struction U P
- 1929 The Hon ble Raja Bahadur Kushalpal Singh, M A ,
L L B , Minister for Education, U P

- 1930 Mr P H Tillard Chief Engineer, P W D , U P
- 1931 Mr W Roche, C I E , I S E , Chief Engineer,
P W D , Irrigation Branch, Western Canals
U P
- 1932 Lieut Col C A Bird D S O R E O C Station,
Roorkee
- 1933 Raja Jwal Prasad Retired Chief Engineer,
P W D Irrigation Branch U P
- 1934 The Hon ble Sir J P Srivastava Kt , M Sc
M L C Minister for Education, U P
- 1935 Sir William Stampe Kt C I E I S E , Chief
Engineer and Secretary to Government, U . P ,
P W D , I B
- 1936 Mr H R Harrop M A Director of Public Instruc-
tion United Provinces
- 1937 Lt Col W dell Hug D S O R F Chief En-
gineer P W D B and R Branch United
Provinces
- 1938 Mr M R Richardson C I F I S E Chief
Engineer P W D I B United Provinces
and President of the Central Board of Irriga-
tion
- 1939 His Excellency Sir Harry Haig K C S I C I E ,
I C S Governor of the United Provinces
- 1940 Dr Panna Lall M A B Sc LL B (Cantab)
D LITT (Agra) Bar at Law C I E I C S ,
Adviser to His Excellency the Governor,
United Provinces
- 1941 Mr J C Powell Price M A C I E , I E S ,
Director of Public Instruction United Prov-
inces
- 1942 Mr G Lacy B Sc C I E , I S E Chief Engineer,
Eastern Canals United Provinces

FROM 1890

*(Of ranks included in Articles 1 to 30 only of the Warrant
of Precedence, 1923)*

- 1890 The Hon'ble Sir Auckland Colvin, K C M G , C I E ,
Lieut Governor, N W P
- 1892 The Hon'ble Sir Auckland Colvin, K C M G , C I E ,
Lieut Governor N W P
- 1895 His Honour Sir A P MacDonnell, K C S I Lieut
Governor, N -W P
Lieut General Sir W K Elles K C B , Command
ing the Forces in Bengal
- 1900 His Honour Sir A P MacDonnell, K C S I Lieut -
Governor, N W P
- 1901 The Bishop of Lucknow
- 1902 His Honour Sir J J D LaTouche K C S I , Lieut
Governor, U P
Major General W T Shone, C B D S O D G M W
Major General Beresford Lovett C B , D G M W
- 1903 Sir A T Arundel, K C S I I C S , Member of the
Viceroy's Council
- 1905 His Excellency Lord Curzon of Kedleston P C
G M S I , G M I E Viceroy and Governor
General of India (April 8)
His Honour Sir J J D LaTouche, K C S I Lieut -
Governor U P
- 1906 Her Royal Highness the Princess of Wales (March 7)
- 1913 Lord Islington, P C , G C M G D S O , Chairman
Royal Commission on the Public Services in
India

- 1916 His Honour Sir James Meston K C S I , Lieut Governor, U P
- 1917 His Honour Sir James Meston, K C S I Lieut Governor U P
- General Sir Charles Munro G C B , G C M G , G C S I Commander in Chief in India
- Lieut General Sir George Kirkpatrick, K C B , K C S I Chief of Staff in India
- 1918 Lieut General Sir H D Keary K C B D S O , G O C Meerut Division
- 1919 Mr T R J Ward C I E M V O Inspector General of Irrigation in India
- General Sir Charles Munro G C B G C M G , G C S I Commander in Chief in India
- 1920 Lieut General Sir Havelock Hudson K C B C I F G O C in C Eastern Command
- 1921 General Sir Claude Jacob K C B K C M G Chief of the General Staff in India
- Major General Sir Edwin Atkinson K B E C B C M G C I E Master General of Supply India
- Mr F St J Gebbie C I E Inspector General of Irrigation India
- Mr B N Sarma Revenue and Public Works Member for Education U P
- 1922 His Excellency Sir Harcourt Butler K C S I C I E Governor U P
- Field Marshall Sir William Robertson G C B G C M G K C V O D S O

The Hon'ble Mr. C. Y. Chintamani, Minister for Education and Industries, U P.

1923 His Excellency Sir William Marris, K.C.S.I., K.C.I.E. Governor, U P.

His Excellency Sir Edward MacLagan, K.C.S.I., K.C.I.E., Governor, Punjab

Major-General Sir Edwin Atkinson, K.B.E., C.B., C.M.G. C.I.E. Master General of Supply, India

The Hon'ble Raja Parmasand, Minister for Education, U P

1925 The Hon'ble Rai Rajeshwar Bali, O.B.E., Minister for Education, U P

Major General R. N. Harrey, C.B., C.M.G., D.S.O., Engineer in Chief, Army Headquarters, India

1926 His Excellency Sir Malcolm Hailey, K.C.S.I., C.I.E., Governor, Punjab

The Hon'ble Sardar Jogendra Singh, Minister for Agriculture, Punjab

1928 His Excellency Baron Irwin of Kirby Underdale, G.M.S.I., G.M.I.E., Viceroy and Governor-General of India (April 11)

1929 The Hon'ble Raja Bahadur Kushalpal Singh, M.A., LL.B., Minister for Education, U P

1931 The Hon'ble Mr. T. P. Srivastava, M.Sc., Minister for Education U P

1932 H. H. the Maharaja of Jaipur

Major General Addison, Engineer-in-Chief, Military Engineering Service in India

- 1933 Major General J E S Brind, Deputy Chief of the General Staff Army Headquarters
- 1935 Sir Sita Ram Ilt President, Legislative Council
- 1936 Major General H S Gaskell, Engineer in Chief
- 1937 R S Weir, Esq, I E S Director of Public Instruction, United Provinces
- The Hon ble Pandit Pyare Lal Sharma M A, LL B, Minister for Education, United Provinces
- The Hon ble Pandit Govind Ballabh Pant B A LL B, Premier and Minister of Home Affairs and Finance United Provinces
- 1938 F A Farquharson Esq Secretary to Government Punjab, P W D, I B
- R S Weir Esq I E S, Director of Public Instruction United Province
- 1939 The Hon ble Sri Sampurnanand B Sc Minister for Education United Provinces
- His Excellency Sir Harry Haig K C S I C I E I C S Governor of the United Provinces and Lady Haig
- 1940 His Excellency Sir Maurice Gairner Hallett K C S I C I E I C S Governor of the United Provinces
- Dr Sir Shah Muhammad Suleman Vice Chancellor of the Muslim University Aligarh and Judge of the Federal Court
- Dr Panna Lal M A B Sc LL B (Cantab) D LITT (Agra) Bar at Law C I E I C S Adviser to His Excellency the Governor United Provinces
- 1941 Mr J C Powell Price M A C I E, I E S Director of Public Instruction United Provinces

List of distinguished passed students of the Thomason College

1851	C C Anderson, Esq
1856	Lieutenant General H E Whish
1860	Lieutenant General W K Elles
1861	Lieutenant Colonel W H Mackesy
1863	General D A Jackson
1864	W C Wright, Esq
1865	H L Monk, Esq
1866	Lieutenant Colonel A C Bigg Wither
1868	Lieutenant Colonel I F Miller
1868	C G Palmer Esq
1870	J S Slater Esq
1871	L W P Foster Esq
1871	T R Bagley Esq
1872	Sir W Willcocks K C M G
1872	G M R Field Esq
1873	Sir W F Garstin
1873	Rai Bahadur Sir Ganga Ram C I I M A O
1876	W MacDonald Esq
1876	W B Gwyther, Esq
1877	J T Farrant, Esq
1878	C S R Palmer, Esq
1878	W L T Bennet Esq, C S I
1878	G M Harriot Esq, C I E
1879	C E V Goument Esq, C S I
1881	E F Gwyther, Esq
1881	R L Purves, Esq
1882	G F Anthony, Esq
1882	J M Taylor, Esq, C I F.
1883	T O Oertel, Esq
1883	C V D Pratt, Esq
1885	A J Wadley, Esq

- 1886 Rai Bahadur Rala Ram, C I E , I S O.
 1886 C H Wollaston Esq
 1888 Sir J Eaglesome, K C M G
 1889 H W M Ives, Esq , C I E
 1889 F T Bates Esq
 1890 F W Allum, Esq C B E
 1891 J N Taylor Esq C I E O B E
 1891 C B Mellor Esq
 1892 W C W Muller Esq , O B E
 1893 A C Verrières, Esq , C I E
 1893 V Stain'ou, Esq
 1894 C E Rushton Esq
 1895 R V Symons Esq O B E
 1895 Rai Bahadur Lala Bishun Swarup
 1898 Sir J B G Smith C I E
 1898 H Dale Green Esq
 1900 Raja Jwala Prasad
 1901 E I Glass, Esq
 1902 E B Robey Esq
 1904 Rai Bahadur Chuttan Lal
 1904 F R Morgan, Esq
 1904 Rai Bahadur B Natha Singh
 1905 C W M Collins Esq
 1906 Rai Bahadur P L Dhawan
 1906 A F Watlins Esq
 1907 F J Jones Esq
 1908 Khan Bahadur Mohammad Abdul Aziz, C I E.
 1909 Rai Salub Gucharan Das Mehta
 1911 J aksampati Mi ra Esq

Only such private students from outside the United Provinces or States within or outside the United Provinces will be admitted to the Civil Engineer Class of the College, who previously apply through the Government of the Province or State in which they reside for permission to appear in the entrance examination and provided that the Government or State concerned agrees, in the event of such students gaining a place in the examination which would entitle them to admission, to pay a contribution towards the cost of their training, based on the actuals of the preceding financial year. The only exceptions to this rule will be where the United Provinces Government agree in special cases to waive this contribution or the students themselves agree to pay it.

From the entrance examination to be held in June, 1939, inclusive, the Punjab Government will not nominate, nor pay for any student admitted to this College from that province.

There is, however, no bar to the admission of a candidate from that province should the parent or guardian of any candidate be willing to pay the cost of training in addition to the ordinary fee and living expenses at the College.

The name and age of a candidate will be taken from the original university records and for candidates who have not appeared for a university examination, from college, or failing a college, from school records. No alterations in the records will be recognized except in the case of purely clerical errors. Application for examination must be accompanied by a true copy of university, college or school registers, as the case may be, signed by the registrar, principal or head master and under no circumstances will any alteration be accepted to the advantage of the candidate.

All Europeans before admission must be properly protected by inoculation against enteric fever to the satisfaction of the Medical Officer in charge of the College. If not protected, they must be inoculated on arrival at the College.

2 No European or Anglo-Indian will be allowed to enter the College if married or to continue in the College, if he marries before completing his course

3. The College session commences on October 16 Applications for admission should *reach* the Principal, *complete in all respects not later than May 1 nor before February 1, preceding* The entrance examination will be held in the first week of June or thereabouts All applications should be accompanied by a statement of—

Date of birth of the candidate

The school or schools at which he has been educated

The profession situation relationship and residence of his father or guardian

One of the examination centres where he wishes to be examined (*vide* paragraph 9) *

N.B —Great care should be taken to ensure that forms are complete in every respect. Incomplete forms are liable to be rejected. Forms of application with instructions showing how they should be filled in may be detached from the circular when required.

4 Every candidate will be required to produce testimonials (which will not be returned) of good moral conduct, signed by the instructor under whom he has been educated, or of some other superior under whom he may have been employed or brought up and these testimonials should have reference especially to his conduct during the two years immediately preceding his application for admission

5 A medical certificate must be furnished on the prescribed printed form enclosed in the circular, no other form will be accepted

NOTE—The fee prescribed by Government for this examination is Rs 4 which must be paid by the candidate direct to the Civil Surgeon Commissioned Medical Officer prior to the examination

6 The examination fee of Rs 20 should be deposited in any Government Treasury in United Provinces under head

VIII—Education F General—Miscellaneous Civil Engineering College Roorkee Examination Fee through treasury chalang which are obtainable from the Treasury. The receipted treasury chalan must be attached to the application form. Fee by postal money orders will be acceptable from stations where there are no Government treasuries. Until the fee or the receipted Treasury chalan has been received by the Principal the candidates' application will not be registered. In no circumstances will this fee be refunded.

7 The minimum qualifying test for admission to the entrance examination is the *Intermediate Examination with Physics, Chemistry and Mathematics* of the Board of High School and Intermediate Education, United Provinces or the *Intermediate Examination with Mathematics, Physics and Chemistry* of any University in British India established by law. Those candidates who have appeared with the subjects mentioned above for this examination before the date of the College entrance examination will also be allowed to sit provisionally for the College entrance examination. Such candidates must however furnish with their application forms a certificate signed by the Head of their College showing the subjects taken by them for the Intermediate Examination. The information of their passing the Intermediate Examination accompanied by a certificate from the Head of their College certifying it should be sent as soon as possible otherwise their results will be excluded from the entrance examination results of this College.

N.B.—If approved by Government the minimum qualifying test for admission to the entrance examination in 1943 will be the Intermediate Examination of the Board of High

School and Intermediate Education United Provinces or the Intermediate Examination of any University in British India established by law or in the case of candidates from European Schools the Cambridge School Certificate with credit in additional Mathematics and a pass in either Chemistry or Physics or the London University Matriculation Certificate which covers the subjects required for the entrance examination or such other qualifications as may be accepted by Government as equivalent thereto.

8 The entrance examination is competitive and those who stand highest on the list of passed candidates (only to the number of available vacancies which is for the present fixed at 20) will be selected for admission to the College. Provided the candidates pass the qualifying entrance examination six places will be reserved for Moslems, one for scheduled castes and one for other minority communities from the United Provinces. The Local Government has power to relax in very special cases the rule regarding the number of admissions. Any candidate who after being duly notified fails to join the College on the day fixed for the re-opening of the session or who before that date fails to obtain from the College authorities definite permission to join on some later date will forfeit his right to admission.

No replies will be given to any telegrams or letters enquiring the results of the entrance examination. A copy of the printed results will be sent to each candidate when published.

9 The following is the list of the four groups of subjects for the competitive entrance examination. The examination will be held by means of written papers at the following centres only viz. Roorkee, Allahabad, Lucknow, Agra and Mussorie*. Candidates may elect the centre at which they wish to be examined.

* The fixing of Mussorie as a centre is conditional on seven candidates being forthcoming.

GROUP No I LANGUAGES (250).

(a) English Essay, General Knowledge, and Every Day Topics

3 Hours

150 Marks.

The candidates will be required to write a short essay on a given subject. The subject set will not be one requiring deep knowledge or thought.

On General Knowledge and Every Day Topics questions will be set on (i) the more important topics of the day and (ii) simple literary, geographical, scientific and other questions.

The chief object of the English Essay and of the questions on General Knowledge and Every Day Topics is, in the first instance, to test the ability of the candidates to express themselves in clear and correct English as well as their general knowledge and interest in current affairs.

Marks up to 10 per cent of the maximum may be deducted for bad handwriting, errors in spelling, careless work and much crossing out.

(b) Hindustani

2 Hours

100 Marks

Translation of extracts, in the Persian or Hindi character, from an easy Hindustani book, and of easy English sentences into colloquial Hindustani, and grammatical questions. Full marks will not be given to candidates unable to write the Persian or Hindi character, but the Hunterian system of transliteration may be adopted.

GROUP No II • MATHEMATICS (300)

(a) Mathematics I (Arithmetic, Geometry and Mensuration).

3 Hours

100 Marks

In this paper questions will be set on problems on (i) General arithmetic principles (ii) the subject matter of plane geometry comprising the syllabus as required for the High School Examination of the United Provinces Intermediate Board, and (iii) mensuration of plane rectilineal figures and of solids like parallelopipeds prisms, pyramids, cones, cylinders, spheres and their sections

Candidates will be expected to be familiar with abridged methods of calculation In geometry proofs of proposition and simple riders involving solution of graphical problems may be set

(b) Mathematics II (Algebra, Trigonometry and Co-ordinate Geometry).

3 Hours

100 Marks

Algebra—General Algebraic principles factors, fractions solution of linear simple and simultaneous and of quadratic equations elementary properties of ratio proportion and various elementary graphics and graphical solutions of equations Binomial theorem for positive index and use of binomial and exponential theorems for any index Elementary partial fractions Simple arithmetic and finite geometrical sequences Use of logarithms

Trigonometry—Trigonometrical ratios and their values in special elementary cases General properties of the ratios and identical relations between them Formulae for ratios of multiple and sub-multiple angles Elementary relations

*No books of any kind are allowed in the Examination hall. Logarithmic tables if required will be supplied by the officer conducting the examination They should not be employed to avoid ordinary abridgement or unethical calculations

between ratios and circular measure Elementary properties of triangles Use of logarithms and trigonometrical tables Solutions of triangles, heights, and distances Elementary properties of quadrilaterals and regular polygons Elementary inverse notation Solution of equations De'Moivre's theorem

Co-ordinate Geometry—Elementary co ordinate geometry of the straight line and the circle (both in Cartesian and polar co ordinates), including also the elementary properties of the parabola and the ellipse (in Cartesian co ordinates only)

(c) **Mechanics (Dynamics and Statics).**

2 Hours

100 Marks

Velocity composition of velocities relative velocity, acceleration composition of acceleration, graphical representation

Laws of motion force, units of force, moments of forces, composition of coplanar concurrent and parallel forces; couples Reduction of a set of coplanar forces and conditions of equilibrium graphical treatment of forces Determination of centroids in simple cases, Friction and its laws

Projections neglecting resistance, motion in circular path, centripetal and centrifugal forces, principles of conservation of momentum and energy, angular velocity and acceleration, moments of inertia in very simple cases, simple harmonic motion, simple and compound pendulums

GROUP No III PHYSICAL SCIENCE (100)

(a) **Physics.**

1½ Hours

50 Marks

Simple Physical Measurements liquids and gases Barometry

Heat and Temperature Thermometry and calorimetry, expansion with variations of temperature, Fusion, evaporation boiling point, vapour pressure, latent heat, conduction, convection, radiation and mechanical equivalent of heat

The production and propagation of sound nature of wave motion, reflection of sound resonance and determination of velocity

Propagation reflection and refraction critical angles, mirrors lenses spectrum, simple telescope microscope photometer

Properties of magnets induction magnetic fields, lines of force the law of magnetic force and magnetic moments

Conductors and insulators electrification by friction and induction influence machines distribution of electrical charge on conductors potential electrical capacity primary cells, properties of the electric current currents and resistance measurements Ohm's law, series and parallel connections, shunts

No practical examination is prescribed but all candidates are expected to have previously undergone an elementary course of practical work in the laboratory

(b) Chemistry

1½ Hours

50 Marks

General properties of matter simple and compound substances laws of chemical combination acids bases and salts, metals and non metals combustion oxidation and reduction Atomic and molecular weights, chemical equivalents, the atomic theory symbols formulae simple chemical equations, Avogadro's rule Dulong and Petit's law, Boyle's law, Charles' law, vapour density diffusion and an elementary knowledge of solution dissociation and electrolysis The preparation, general properties and principal compounds of hydrogen and

gen, nitrogen, the halogens, carbon, sulphur, phosphorus and silicon.

No practical examination is prescribed, but all candidates are expected to have previously undergone an elementary course of practical work in a laboratory.

GROUP No IV DRAWING* (150)

(a) Geometrical Drawing

3 Hours

100 Marks.

Printing Simple Diagonal and Vernier Scales Drawing of plane Geometrical figures, arches, projections and sections of simple solids The course is covered by Chapters 1—7 inclusive of the Thomason College Manual of Drawing, Part I.

(b) Freehand Drawing

1 Hour

50 Marks.

Drawing of any architectural ornament or pattern to a reduced or enlarged scale All work will be done free hand, no rulers, etc being allowed

10. To pass the examination a candidate must obtain $33\frac{1}{3}$ per cent. of the 250 marks for Group I, Languages and $33\frac{1}{3}$ per cent. of the 150 marks for Group IV, Drawing; $33\frac{1}{3}$ per cent. of the 100 marks for the Mathematics, Paper I, $33\frac{1}{3}$ per cent. of the 100 marks for the Mathematics, Paper II, and $33\frac{1}{3}$ per cent. of the 100 marks for the Mechanics Paper, and $33\frac{1}{3}$ per cent. of the total aggregate number of marks, viz. 800 No marks will be allotted in any paper if a candidate obtains less than 20 per cent. and up to 10 per cent. of the marks in each paper may be deducted for slovenly work.

11 Sixteen scholarships of Rs.60 a month are sanctioned for this class out of which three are reserved for

*Particular attention is called to this subject in which many candidates fail to qualify

students from the scheduled castes one in each year. Of these scholarships six will be awarded to first-year students, five to second-year students and five to third-year students

These scholarships are awarded to first year students on the results of the entrance examination and to second and third year students on the results of the first and second year's work and examinations and are tenable for the *nine months of the College session*. All the scholarships are reserved for candidates of the United Provinces

Government has been pleased to sanction the award of a Passing Out Scholarship of approximately Rs 250 to Rs 300 payable from the College Stores Trust Fund to the senior European or Anglo Indian student, who successfully passes the third year Final Examination of the Civil Engineer Class after completing the whole course of three years

12 A College tuition fee of Rs 24 per mensem will be paid during the session by each student of the class irrespective of his domicile

13 The engineer class students maintain and run a common mess, catering for vegetarians non vegetarians, and those messing according to European diet. The students in the running of this mess are helped by a member of the staff appointed by the Principal each session as President. All students are advised to join. Should they not do so, they have to make their own arrangements for messing

14 Students are encouraged to take up military training by joining either the Indian Auxiliary Force or the University Training Corps. Physical Training is compulsory

15 It is desirable that every student should be able to swim before joining the College.

16 Each student should, on joining the College, be provided with a good set of drawing instruments and necessary

class books for his own use. Class books are obtainable at the College Book Depot

17. Quarters are provided for all students of the Civil Engineer Class in hostels near the College, a student being given a room to himself. The charges for rent and conservancy are Rs.5-12 per mensem. The hostels have been electrified, the charges for current being annas four per unit. Students have to provide their own fans.

18. A limited number of sets of furniture, as detailed below, are available for issue to students in order of seniority for which a monthly rental of Rs. 2-8 is charged :—

- 1 Bed cot with mosquito frames and mattress.
- 1 Armless chair.
- 1 Easy chair.
- 1 Table (large), with book shelf.
- 1 Small table.
- 1 Towel rack.
- 1 Chest of drawers

Students should arrange to bring their own mosquito nets and durries.

19. Every candidate before he can be allowed to join the College must satisfy the Principal that he has sufficient means to defray his expenses during his course at Roorkee.

Any student failing to pay his College dues,* or to make sufficient progress in study, will be suspended or ultimately

*The words " College dues " include—

- (i) College fees
- (ii) Rent and conservancy.
- (iii) Rent of College furniture
- (iv) Electric current charges
- (v) Recreation fund subscription and cost of articles purchased from recreation stores.

removed from the College. The parent or guardian of any student so suspended or removed shall be held responsible for the payment of any debts whatsoever which may have been contracted while the student was in the College. Although every precaution is taken to prevent students from running into debt, the College authorities are in no way to be considered responsible for such debt.

20. The College year usually commences on October 16 and closes on July 15. Candidates admitted to the College on the results of the entrance examination held in June will be informed on what date to join the College in the following October.

21. Students in the Civil Engineer Class are trained for the Indian Engineering Services and the Civil Engineering profession generally. Many have gained employment out of India.

22. The Civil Engineering Course extends over three years. In the third year in March the final examination is held, when those students who have completed their course of study and have qualified will be awarded a diploma in Civil Engineering and will be entitled to use the letter C E (Roorkee) after their names.

A fee of Rs 40 is payable in the third year in February by each student, who intends to appear for this examination. If a student, having paid the fee, does not eventually appear for the examination, the fee will not be refunded.

23. The marks each student has to obtain to qualify for admission to the second and third year, and to obtain the College Diploma in Civil Engineering awarded upon completion of this third year are as follows —

- (a) For admission to the second year the first year students are required to obtain 33 per cent of the marks allotted to each Sub Group for written

examinations and practical work respectively and 50 per cent of the total marks

- (b) To return to the College at the end of the second year the students are required to obtain 33 per cent of the marks allotted to each Sub Group for written examination and practical work respectively in that year (i.e. in the second year) and 50 per cent of the total marks for the two years, i.e. of the full marks for the second year together with the reduced marks of the first year
- (c) To pass out of the College at the end of the third year the students are required to obtain 33 per cent of the marks allotted to each Sub Group for written examination and practical work respectively, in that year (i.e. the third year), and 50 per cent of the total marks for the three years i.e. of the full marks for the third year together with the reduced marks for the first and second years
- (d) The ordinary Diploma is awarded to students who qualify as above and obtain less than 66 per cent of the total marks. The honours Diploma is awarded to students who qualify as above and obtain 66 per cent or more of the total marks. Students who fail in any year will be allowed to repeat their course provided their stay in the College does not exceed four years on condition that such a student will not be eligible for academic prizes, scholarships or guaranteed appointments

Cases of failures due to prolonged absence through sickness or other circumstances, beyond the students' control, will be considered and decided upon their merits

24 No student will be eligible for any College academic prizes unless he completes his course concurrently with the students who entered the College in the same year

25 Arrangements for giving practical training to Engineer students of the United Provinces upon completion of their course at the College will be made as far as possible in the United Provinces Public Works Department, Irrigation and Buildings and Roads branches During the period of such practical training no allowances of any kind are now sanctioned.

26 The list of the text-books, etc. used in the Civil Engineer classes of the College is given on page 91. The prices quoted are approximate

27 Drawing instruments, drawing boards, T-square, etc are procurable in the Bazar, every student must provide himself with these at his own cost

28 Any student, who is expelled from the College for misconduct, will not be allowed to appear in any examination conducted by the College

29 Students will not be permitted to appear for any external examinations during their College course.

30 All students have to be in possession of the booklets of Standing Orders and Course of Study A plea of ignorance for the breach of any of the former is not accepted A copy of each of these booklets will be issued to each new student on arrival and the cost recovered in his first bill Students therefore should not provide themselves with out of date copies

Any student requiring an extra copy of the Course of Study may obtain it on payment from the Assistant Superintendent, Government Press, Roorkee Branch, Roorkee

MADAN GOPAL SARDANA,

ROORKEE

Principal, Thomason College.

October, 1912

Memorandum of Expenses of Students of the Civil Engineer Class

THE following information is published for the guidance of parents and guardians, and for their assistance in determining the probable expenses of a course of instruction at the College. Economical management is aided as far as possible by the College authorities.

It must be clearly understood that students cannot be permitted to remain in the College if their dues* of any kind are not paid promptly on demand. The probable expenses of a student while at the College are shown under three heads, viz. the initial expenses at the beginning of each yearly term and the monthly current expenses and the final examination expenses. All College dues must be paid before the 21st of the month to which they relate and any student in arrears on the first of each month will lose all marks for any examination that may occur between this date and that on which he clears his account. Guardians are advised to send the above amounts direct to the Principal, and, if convenient, the whole remittance intended for the student can thus be sent, and the balance will at once be made over to him.

* NOTE—The words "College dues" include—

- (i) College fees
- (ii) Rent and conservancy
- (iii) Rent of College furniture
- (iv) Electric current charges
- (v) Recreation fund subscription and cost of articles purchased from recreation stores
- (vi) All dues in connexion with Engineer Class Club
- (vii) All dues of College dairy, College shoe maker, College shopkeeper, College tailor, College sweet seller and College stores
- (viii) All dues in connexion with Common Civil Engineer Class Mess

Details of Expenses

Each student upon first joining the College and at the commencement of each subsequent year has to incur certain non-recurring expenses. The details of these with approximate costs, as far as it is possible to give them, are stated below. Every student has to have certain text books of his own for the year's work. These books are obtainable at the College Book Depot at prices $12\frac{1}{2}$ per cent lower than published prices. The costs quoted take this into consideration. The list of these books is given on page 91.

N B—List and prices are liable to alteration. Prices shown are all approximate.

Details	Price	Remarks
<i>Upon first joining</i>	Rs. a	
Box of drawing instruments		} Prices too variable to be quoted
T square 35"		
Set squares 45° and 60°		
Brushes and colours		
Two drawing boards (24"×36" and 24"×18")		
Cost of ————		
1 pair of wing compasses		
Text books	57 15	
Level books each	1 4	
Survey field books each	0 12	
Survey note books each	3 0	
<i>Entrance fee</i>		
C E Recreation Sports and Regatta	15 0	} Obligatory to join Optional
C E Students Club	10 0	
C E Students Common Mess	2 0	

Details	Price	Remarks
	Rs. a	
<i>Commencement of 2nd year</i>		
1 Chesterman steel woven tape, 100 feet		
Text books, say	72 5	
<i>Commencement of 3rd year</i>		
Text books, say	38 0	
<i>At end of 3rd year</i>		
Final examination fee	40 0	

Monthly expenses

(9 months only)

Items	Price	Remarks
	Rs. a	
College fee	24 0	} Fixed obligatory charges.
Rent and conservancy	5 12	
Rent of College furniture	2 8	
Subscription C. E. Recreation Sports and Regatta	7 0	
Dutro Students' Club	3 0	
College Magazine subscription	0 4	} Joining the Mess is optional. Those who do not join make their own arrangements.
Subscription C. E. Common Mess	1 0	
Vegetarian Messing	23 0	} Rs 5 if fan is used. Approximate only.
Non-vegetarian Messing	31 0	
Electric light	3 0	
Bearer, say	12 0	
Bhusty, say	2 0	
Dhobi, say	3 0	
Sweeper, say	2 0	

List of essential text-books

Particulars	Cost Rs a.
<i>Civil Engineer Class—I Year</i>	
"Dynamics"—Landon .. .	5 8
"Statics"—Puri, B D .. .	5 12
"Examples in Theory of Structures"—Landon .. .	3 8
"Theory of Structures"—Morley .. .	8 8
"Roorkee Treatise on Surveying," Part I .. .	3 3
"Heat for Engineers"—Darling . . .	7 12
"Heat Engines"—Low .. .	10 0
"Theory of Machines"—Mackay .. .	13 12
Total .. .	57 15

<i>Civil Engineer Class—II Year</i>	
"Structural Engineering"—Husband and Harby .. .	10 12
"Roorkee Treatise on Bridges "	7 0
"Military Engineering (Volume V) Roads, 1935 "	5 0
"Roorkee Treatise on Railways "	5 1
"Roorkee Treatise on Surveying"—Part II . . .	2 10
"Callendar's Steam Tables "	2 4
"Mollier's Diagrams "	1 4
Maccal's "Continuous Current "	9 8
Maccal's "Alternating Current " .. .	9 8
"Applied Thermo-dynamics"—Robinson	10 12
"Hydraulics" by Lewitt .. .	8 10
"Indian Water Works Practice by " Banerjee	.
Total .. .	72 5

<i>Civil Engineer Class—III Year</i>	
"Elements of Reinforced Concrete Design"—Adams	5 0
"Concrete Plain and Reinforced" by Taylor Thomson, Volume I . . .	27 0
"Sewers " by Bevan and Rees . . .	6 0
"Sewage Purification and Disposal " by Kershaw	.
Total .. .	34 0

Notes for the guidance of candidates when filling in application forms for Entrance Examination for classes in the Thomason College.

General

IMPORTANCE.

It is impressed upon candidates that failure to observe these instructions implicitly must result in prolonged correspondence and possibly the rejection of the application. All forms when sent to this College should be pinned together. All forms must be kept clean.

NAME OF CANDIDATE.

The full name of the candidate *and not initials* must be shown on all papers and it is important to note that only the name as entered in the educational certificate must be used. Spelling of name should be the same in all the forms as are in the educational certificate or as will appear in the *Gazette* in case of provisional candidates. No additions to or omissions from that name will be permitted. In the case of Europeans or Anglo Indians the production of a birth or baptismal certificate in support of additional Christian or surname will not be recognized.

DATE OF BIRTH

The date of birth as entered in the application forms must be the same as that entered in the educational certificate which must be certified. The production of a birth certificate or horoscope will not be accepted as proof for any change from the date given in the educational certificate.

GENERAL

Separate forms should be filled in for each Examination for Civil Engineer, Overseer or Draftsman classes.

*Particular***MORAL CHARACTER CERTIFICATE**

It should generally be signed by the Head Master or the Principal of the institution in which the candidate has studied, failing this by a gazetted officer other than the relation of the candidate. The words "last two years" should be crossed out only when the candidate has been in two institutions in which case two separate certificates should be obtained and furnished. These should relate to the period he has been in each institution and the period should be stated.

EDUCATIONAL CERTIFICATE

A word to word copy of the Intermediate Examination certificate in case of Civil Engineer class and the High School Examination in the case of the Overseer class candidates verified by a government gazetted officer should be furnished. If the candidate has only appeared at the Examination a certificate from the Principal or the Head Master stating that he has appeared at the Intermediate Examination or the High School Examination showing the year in which he has appeared should be furnished. The result of such examinations should be communicated to the Principal as soon as they are published. Full designation of the verifying officer and the date on which he verifies the certificate should be given under his signatures.

MEDICAL CERTIFICATE

It should be signed by a Commissioned Medical Officer belonging to an all India Service or by an officer in charge of a Civil Station (i.e. Civil Surgeon). A certificate signed by a Medical Officer in charge of a Civil Hospital is not sufficient unless the officer comes within one of the above categories. Marks of identification should be caused to be entered by the

medical officer granting the certificate If the eye sight is defective the medical officer granting the certificate should be requested to quote the paragraph noted on reverse

AGE CERTIFICATE

It should be signed by the officers named in the form Name of school from the records of which the date of birth has been entered should be given in the place provided for it Date of birth should be written and not the word 'correct' etc

STATEMENT OF AGE EDUCATION, ETC

It should be carefully completed In column 3 place of domicile of father or if father deceased that of the guardian should be filled in Particulars of father as required in column 5 should be filled fully If father is deceased full particulars of guardian should be filled in and the fact of the father's death should be stated It should generally be signed by the Head Master or the Principal and place and date to be written in the left hand side One of the certificates at bottom to be crossed out and the other initialed where permanent address is required permanent address should be given and not a temporary one

DOMICILE

In order to obviate lengthy correspondence all claims to United Provinces domicile should be supported by a certificate from the District Magistrate in the enclosed form All corrections in the form should be got initialed by the District Magistrate

MADAN GOPAL SARDANA

RAI BAHADUR

Principal

ROORKEE

October 16 1942

APPENDICES

Forms required to accompany a candidate's application for admission to the Thomason College, Roorkee, are shown below -

- (1) Moral certificate
- (2) Educational certificate *
- (3) Medical certificate on the form prescribed
- (4) A certificate of the recorded date of birth
- (5) Declaration as Statutory Native of India in case of other than pure Indians not included in the circular and may be asked for when required
- (6) Statement showing age, education, etc of candidate
- (7) Domicile certificate (only for U P students)

* Copies properly certified by a Government gazetted officer only will be accepted

FORM No 1

Moral Certificate required from candidates for admission to the Entrance Examinations of Civil Engineer Class of the Thomason College, Roorkee.

Certified that _____ bears a good moral character and has done so for the last two years.

.

.

STATION _____ Signature and designation of Instructor
Date _____ to under whom educated, or
superior under whom employed
or brought up

FORM No 2

Copy of Educational Certificate to accompany application of
candidate for admission to the Thomason College,
Roorkee.

Verified.

(Signature of any gazetted officer of Government)

FORM No 3

Medical Certificate to accompany application of candidate for admission to the Thomason College, Roorkee.

I CERTIFY that I have carefully examined _____, that his eye sight is of the standard prescribed,* that he is fairly robust, and his constitution is sound, and that he has no disease bodily or mental infirmity unfitting him now or likely to unfit him in the future, for active out door service in the Public Works Department

Marks of identification

Station _____

Signature _____

Dated _____

Designation _____

NB—The above certificate must be signed by a *Commissioned Medical Officer* or by a *Medical Officer in charge of a Civil Station* within a month before date of submission and must include a description giving clearly the personal marks of identification of the Candidate who has been medically examined. No other certificate will be accepted nor will application be entertained unless the above rules be strictly complied with

*Please quote the no. of para if the eye sight of the Candidate is according to one of the prescribed paras on reverse

Standard of eye-sight required for admission to the Department of Public Works of India.

1. If myopia in one or both eyes exists, a candidate may be passed, provided the ametropia does not exceed 3.5 D, and if, with correcting glasses not exceeding 3.5 D, the acuteness of vision in one eye equals $\frac{6}{9}$, and in the other $\frac{6}{6}$ there being normal range of accommodation with the glasses

2 Myopic astigmatism does not disqualify a candidate provided the lens or the combined spherical and cylindrical lenses required to correct the error of refraction, does not exceed 3.5 D, the acuteness of vision in one eye, when corrected, being equal to $\frac{6}{9}$, and in the other $\frac{6}{6}$, together with normal range of accommodation with the correcting glasses, there being no evidence of progressive disease in the choroid or retina

3 A Candidate having total hypermetropia not exceeding 4 D is not disqualified provided the sight in one eye (when under the influence of atropine) equals $\frac{6}{9}$, and in the other equals $\frac{6}{6}$, and with + 4 D glasses or any lower power

4 Hypermetropic astigmatism does not disqualify, provided the lens or combined lenses required to cover the error of refraction do not exceed 4 D, and that the sight of one eye equals $\frac{6}{6}$ and the other $\frac{6}{6}$, with or without such lens or lenses

5 A Candidate having a defect of vision arising from nebula of the cornea is disqualified if the sight of one eye be less than $\frac{6}{12}$. In such a case the better eye must be emmetropic. Defects of vision arising from pathological or other changes in the deeper structures of either eye, which are not referred to in these rules, may exclude a Candidate

6 A Candidate is disqualified if he be unable to distinguish the principal colours (achromatopsia)

7 Paralysis of one or more of the exterior muscles of eyeball disqualifies a Candidate for it

FORM No. 4.

University, College or School Certificate of age required in
case of Candidates for the Entrance Examination of the
Thomason College, Roorkee, United Provinces.

Certified that the date of birth of _____

son of _____ as entered in the records

of the _____ (a) { University.
College.
School.
is _____ ;

Signature of—

STATION

Date

(a) { Registrar _____ University.
Principal _____ College.
Head Master _____ School.

(a) Two of these to be struck out ..

FORM No 6.

Statement of age, Education etc., to accompany application for admission to the _____ Class of the Thomason College Roorkee

Name of candidate	Date of birth as furnished to the highest institution of these three— (1) University (2) College (3) School	Province of domicile of the father and if father not living of guardian where he must have definitely settled and resided for a period of three years	School or College at which educated	Name, profession, situation, residence and caste of father or if father not living of guardian, showing relationship of latter to candidate	Centre selected in case of candidates of United Provinces for the C E Class	Remarks

I am willing to be vaccinated on admission

Place _____

Date _____

Signature of candidate

Signature of Head Master or forwarding officer

Permanent } _____
address } _____

Certificate in case of candidates for admission to the Overseer Class

Certified that I have not studied for more than three months in the Civil Engineer Class of the Thomason College Roorkee

Certificate in case of all candidates (one of which is to be crossed out and the other initialed)—

Certified that I have appeared for the Entrance Examination of the _____ Class of the Thomason College, Roorkee in the year _____ and my Roll no was _____

Certified that I have not appeared for any Entrance Examination of the Thomason College Roorkee

Since seats are reserved in the Civil Engineer and Overseer classes for United Provinces candidates of the minority communities which include depressed classes also it would be in the interest of the candidates if they give their castes prominently should they belong to any noted on reverse of the form

Signature of candidate

List of castes of the United Provinces included in the "Depressed Classes."

1. Throughout the Provinces—

Agariya	Hari
Aheriya	Hela
Badi	Kanjar
Badluk	Kalabaz
Baheliya	Kharot
Bajaniya	Kharwar (except Benbansi)
Bajgi	Khatik
Balahar	Kol
Balmiki	Korwa
Banmanus	Lalbegi
Bansphor	Majhwar
Barwar	Nat
Basor	Pankha
Bawariya	Parahiya
Beldar	Pasi
Beriya	Petari
Bengali	Rawat
Chamat	Seharya
Chero	Sanaurhiya
Dabgar	Sansiya
Dhangar	Shulpkar
Dhanuk (Bhanggi)	Bhantu
Dharkar	Kapariya
Dhobi	Bhuiya
Dom	Karwal
Domar	Tharu
Gharani	Bhuyar
Ghasiya	Khairaba
Gaul	Turaha
Habura	Boriya

2 Throughout the Province except in the Agra, Meerut and Rohilkhand divisions—Kori

FORM No 7

CERTIFICATE OF NATIONALITY, DOMICILE AND RESIDENCE

Certified that_____

who is candidate for the Entrance Examination for admission
to the Civil Engineer
Overseer class of the Thomason College of
Draftsman
Civil Engineering, Roorkee, resides at_____ District
_____and is

(a) a natural born British subject the domicile of origin
of whose father is in the United Provinces and
who himself is domiciled in the United Pro-
vinces,

Or

(b) a natural born British subject the domicile of origin
of whose father was not the United Provinces,
but who or whose father has acquired a domicile
in the United Provinces provided that the candi-
date himself has, after such acquisition, resided
in the United Provinces for not less than five
years at the date on which he applies for permis-
sion to appear at the entrance examination

Place_____

District Magistrate,

Dated_____

_____ *District.*

*The rules in this Circular are liable to revision without notice
in view of possible changes in the Course of Study,
orders of Government, etc.*

[C I R C U L A R]

THOMASON COLLEGE OF CIVIL ENGINEERING. ROORKEE.

These rules apply to admissions in 1943 and until further notice

OVERSEER CLASS

1 The Overseer Class has been constituted at the College to meet the requirements of the Subordinate Engineering Service of the Public Works Department of the United Provinces and of the public demands for a class of men trained as overseers

2 Candidates for admission to this class must not be under 16 or above 21 years of age on June 1 immediately preceding the entrance examination in which they wish to appear

Overage candidates are allowed to sit for the competitive entrance examination provided they are not over 25 years of age on June 1 immediately preceding the entrance examina

The name and age of a candidate will be taken from the certificate granted by the Board of High School and Intermediate Education or University as the case may be. No alteration in them will be recognized except in the case of purely clerical errors.

3 The class is intended primarily for Europeans, Anglo-Indians and Indians residents within the United Provinces excluding States within it. Extra-provincial candidates will be admitted only if vacancies remain after the admission of the United Provinces candidates. An annual contribution is charged for extra-provincial candidates. This contribution is based on the actual expenditure of the preceding financial year and will be intimated by the Principal on inquiry being made to him. Where a candidate is willing to bear this contribution himself, the application for permission to appear in the admission examination may be submitted direct to the Principal, otherwise it should be submitted through the Government of the Province or State in which the candidate resides. The Government or State forwarding such an application should clearly state that in the event of the candidate obtaining in the examination a place which entitles him to admission the Government or State concerned will be willing to pay the above contribution. The United Provinces Government may, in special cases, waive this contribution.

4 Applications for admission should reach the Principal, complete in all respects, not later than May 1, nor before February 1, preceding the entrance examination accompanied by a statement of—

The date of birth of the candidate.

NOTE.—Since Government departments in the United Provinces demand a domicile certificate signed by the District Magistrate before over-seers are appointed guardians are advised to furnish this certificate with the application. This will obviate further correspondence and possible rejection of the application.

The school or schools at which he has been educated
The profession, situation, relationship and residence of
his father or guardian

N.B.—Great care should be taken to ensure that forms are complete in every respect. Incomplete forms are liable to be rejected. Forms of application with instruction showing how they should be filled in may be detached from the circular when required.

5 Every candidate will be required to produce testimonials (copies properly certified by a Government gazetted officer will be accepted), which will not be returned, of good moral conduct signed by the instructor under whom he has been educated, or of some other superior under whom he may have been employed or brought up, and these testimonials should have reference especially to his conduct during the two years immediately preceding his application for admission

6 The qualifying tests for admission to the entrance examination will be the High School examination conducted by the Board of Education United Provinces or the School Leaving Certificate examination of this province or the Matriculation examination of the Allahabad University (or equivalent examination of other provinces at present recognized by the United Provinces Board of High and Intermediate Education for purposes of High School) The Senior Cambridge examination or the High School Final examination under the Code of Regulations for European schools in force in Bengal Bombay and Madras Presidencies, the United Provinces, Punjab or Central Provinces will also be recognized. Those candidates who have appeared for any of the examinations, noted as the qualifying tests, before the date of the College entrance examination, but the results of which have not been published before the last date for sub-

mission of their applications to the Principal, are allowed to sit provisionally for the College entrance examination. Such candidates must, however, furnish with their application forms a certificate signed by the Head of their school or College, stating that they have so appeared. Their marks will be excluded from the result sheet if the information of their passing the qualifying tests are not communicated before the publication of the results of this College.

7 The examination fee of Rs 10 should be deposited in any Government Treasury in United Provinces under head "XXVI—Education E General—Miscellaneous Civil Engineering College, Roorkee Examination Fee", through treasury chalangans which are obtainable from the Treasury. The receipted treasury chalan must be attached to the application form. Fee by postal money orders will be acceptable from stations where there are no Government treasuries. Until the fee or the receipted Treasury chalan has been received by the Principal the candidate's application will not be registered. In no circumstances will this fee be refunded.

8 A medical certificate must be furnished on the prescribed printed form enclosed in the circular, no other will be accepted. Students of the Draftsman class, when appearing for the Entrance examination of this class need not submit a fresh medical certificate.

NOTE—The fee prescribed by Government for this examination is Rs 4 which must be paid by the candidate direct to the Civil Surgeon or the Commissioned Medical Officer prior to the examination.

9 The candidate must be acquainted with both the English language and the modern Indian languages and able to speak, read and write them with tolerable ease and accuracy. He must pass an entrance examination in the following subjects, which will be held during the first week in June, at the following centres, viz, Roorkee, Agra, Lucknow, Allahabad and at any other centres, at the discretion of the Principal.

SUBJECTS OF EXAMINATION AND MARKS

Paper No	Subject	Full marks	Qualifying Marks	Time allowed
1		75	42	2½ hours
1A		50		½ hour.
2	Modern Indian Languages Translation of extract in Nagri or Nastaliq from any easy book and of easy English sentences into colloquial and grammatical questions	75	25	3 "
3	Arithmetic Candidates will be expected to be familiar with all the general arithmetical principles and able to	100	33	3 hours.
4				
5	equations Geometry and Mensuration Geo	100	33	3 "
6		100	33	3 "
		100	33	3 "

N B—One half of the total marks are required for passing

10 The entrance examination is competitive, and those who stand highest on the list of passed candidates (only to the number of available vacancies, which is for the present fixed at 40), will be selected for admission to the College. Provided the candidates pass the qualifying entrance examination, eight places will be reserved for Moslems, one for scheduled castes and one for other minority communities. Any

candidate who, after being duly notified, fails to join the College on the day fixed for the reopening of the session, or, who before that date fails to obtain from the College authorities definite permission to join on some later date, will forfeit his right to admission

11 No degree, certificate, etc., obtained by him at any other institution will entitle a candidate to enter the College, nor will it exempt him, in whole or in part from the entrance examination above detailed

12 Each examination is complete in itself, and no credit for marks gained in one examination is carried on to any other examination. A candidate who has failed in, or withdrawn from, an examination after his name has been registered, and presents himself for examination on a subsequent occasion, must undergo the full examination and furnish a fresh fee and certificates. *No replies will be given to any telegram or letter enquiring the results of the entrance examination.* A copy of the printed result will be sent to each candidate when published

13 In this class a College fee of Rs 6 a month during the session will be charged to students admitted through the entrance examination. All students of this class will be provided with unfurnished quarters in the College hostels at a monthly rent of Re 1, but no member of a student's family is allowed to reside in them with him

The hostels have been electrified, the charges for current being annas four per unit. Students must provide their own fans

14 There will be 8 scholarships of the value of Rs.25 per mensem, each tenable for the nine months of the College-session, awarded annually on the results of the entrance examination and on the first year's work and examinations.

out of which one is reserved in each of the 2 years for a student from the scheduled castes. All scholarships are reserved for United Provinces candidates.

* 15 Each student will make his own arrangements for the purchase of the necessary class books and instruments. The probable expenses are shown in the appendices. No one should present himself for admission who is not prepared to meet all charges as well as those of feeding himself, and dressing in decent and clean apparel.

16 Any student failing to pay his College dues,* or to make sufficient progress in study, or whose conduct is unsatisfactory, will be suspended or ultimately removed from the College. The parent or guardian of any student so suspended, or removed shall be held responsible for the payment of any debts whatsoever which may have been contracted while the student was in the College. Although every precaution is taken to prevent students from running into debt, the College authorities are in no way to be considered responsible for such debt.

17 The course is of two years duration. The College session commences on or about October 16, and ends on July 15, following. Examinations are held at the end of the first and second sessions. Any student failing to attain the standard prescribed in these two examinations will be allowed to repeat his course provided his stay in the College does not exceed three years. Such a student will not be eligible for

NOTE—*The words College dues include—

- (i) College fee
- (ii) Rent and conservancy
- (iii) Rent of College furniture
- (iv) Electric Current charges
- (v) Recreation fund subscription and cost of articles purchased from recreation stores
- (vi) All dues in connexion with Overseer Class Club
- (vii) All dues of College Dairy, College shoe maker, College shop-keeper, College tailor, College sweet seller and College stores.

academic prizes, Government scholarships or guaranteed appointments

Failures, due to prolonged absence through sickness or other circumstances beyond the student's control will be considered and decided upon the merits of the case

For admission to the second year a student has to obtain at least 33 per cent of the marks allotted to each group and 45 per cent of the grand total. At the close of the second session the final examination will be held and a student is required to obtain 33 per cent in each group and 45 per cent. in the aggregate

18 The College vacation will be from July 15 to October 16 or thereabouts. Students will not be allowed to stay in the College hostels during the vacation

19 Upon successful completion of the course two classes of certificates are awarded as follows

I. The Higher Certificate, awarded to students obtaining at least 45 per cent in each group and 60 per cent of the total marks

II The Ordinary Certificate, awarded to students obtaining at least 33 per cent in each group and 45 per cent of the total marks

20 Every endeavour will be made to give unpaid practical training to all the United Provinces students but no guarantee in this respect can be given

21 The list of the text books, etc., used in the class, is given on pages 117 and 118. The prices quoted are approximate. Books are available at the Book Depot in the College

22 Drawing instruments, drawing boards, T squares, etc., are procurable in the bazar. Every student must provide himself with these at his own cost

23 Any student who is expelled from the College for misconduct will not be allowed to appear in any examination conducted by the College

24 It is desirable that every student should be able to swim before joining the College

25 Students will not be permitted to appear for any external examinations during their College course

26 All students have to be in possession of the booklets of Standing Orders and Course of Study. A plea of ignorance for the breach of any of the former is not accepted. A copy of each of these booklets will be issued to each new student on arrival and the cost recovered in his first bill. Students therefore should not provide themselves with out of date copies

Any student requiring an extra copy of the Course of Study may obtain it on payment from the Assistant Superintendent, Government Press Roorkee Branch, Roorkee

ROORKEE

MADAN GOPAL SARDANA

October, 1942

Principal



Memorandum of the Expenses of Students of the Overseer Class

The following information is published for the guidance of parents and guardians, and for their assistance in determining the probable expenses of a course of instruction at the College

Economical management is aided as far as possible by the College authorities

It must be clearly understood that students cannot be permitted to remain in the College if their dues* of any kind are not paid promptly on demand

The probable expenses of a student while at the College are shown under two heads, viz (i) the initial expenses of each yearly term, and (ii) the monthly current expenses

Details of Expenses

Each student upon first joining the College and at the commencement of the second year has to incur certain

*Note—The words College dues include

- (i) College fees
- (ii) Rent and conservancy
- (iii) Rent of College furniture
- (iv) Electric current charges
- (v) Recreation fund subscription and cost of articles purchased from recreation stores
- (vi) All dues in connexion with Overseer Class Club
- (vii) All dues of College Dairy College shoe maker College shop keeper, College tailor, College sweet seller and College stores

non recurring expenses The details of these with approximate costs, as far as it is possible to give them, are stated below Every student has to have certain text books of his own for each year's work These books are obtainable at the College Book Depot at prices $12\frac{1}{2}$ per cent lower than published prices The costs quoted take this into consideration The lists of these books are given on pages 117 118

Details	Price	Remarks
<i>Upon first joining</i>	Rs a	
Box of drawing instruments		Prices too variable to given
T square 36"		
Set squares 45° and 60°		
Brushes and colours		
Two drawing boards (24"×36" and 24"×18")		
One case of architectural scales		
One case of engineers and surveyors scales		
One Chesterman steel woven tape 100 feet		
One workshop tool set comprising : 1 steel L square 1 steel rule 12" 1 pair inside callipers 1 pair outside callipers		
Text books say	46 8	
Level books each	1 4	
Survey field books each	0 12	
Survey note books each	3 0	
<i>Entrance fee</i>		
Overseer Class Club and recreation	3 0	
<i>Commencement of second year</i>		
Text books say	46 0	

Monthly expenses
(9 months only)

Item	Price	Remarks
	Rs a	
College fee	6 0	} Fixed obligatory charges
Rent	1 0	
Subscription Overseer Class Club recreation and boating	5 0	
College magazine subscription	0 4	} If fan used Rs 5
Electric energy	3 0	
Cook, say	1 8	} Approximate only
Servant say	1 8	
Dhobi say	1 8	
Measuring hire of furniture etc		Whatever a student may make it

List of essential text books

Particulars	Cost Rs a
OVERSEER CLASS—I YEAR	
Roorkee Treatise on Earthwork	1 12
' Building Construction Advanced Course —Mitchell	7 14
Building Construction, Elementary Course —Mitchell	4 14
' Elementary Trigonometry —Loney	3 1
' Elementary Mensuration —Pierpoint Parts I and II	3 14
' Elements of Statics and Dynamics	6 8
" Roorkee Treatise on Surveying —Part I	3 1
' Heat Engines —Low	10 0
' Class Book of Physics —Gregory and Hadley, Parts III IV and V (1 volume) Parts VI VII and VIII (1 volume) at Rs 2 each	4 0
" Logarithmic Tables '—College Manual	1 8
Total	46 8

List of essential text books—(concluded)

Particulars	Cost Rs. a.
OVERSEER CLASS,—II YEAR	
" Building Mechanics "—Sheppard	5 8
" Military Engineering (Volume V) Roads, 1935 "	5 0
" Roorkee Treatise on Railways "	5 1
" Roorkee Treatise on Bridges "	7 0
" Roorkee Treatise on Irrigation "—Volume I	4 6
" Sewers and Sewerage "—Whyatt . ..	1 12
" U P Irrigation Technical Paper no 1 (Design of Channels) "—G Lacey .	0 14
" Roorkee Treatise on Estimating "	6 9
" Elementary Hydraulics for Technical students "—F C Lea	4 14
" Elements of Reinforced Concrete " by Adams	5 0
Total	<u>46 0</u>

Notes for the guidance of candidates when filling in application forms for Entrance Examination for classes in the Thomason College.

General

IMPORTANCE.

It is impressed upon candidates that failure to observe these instructions implicitly must result in prolonged correspondence and possibly the rejection of the application. All forms when sent to this College should be pinned together. All forms must be kept clean

NAME OF CANDIDATE.

The full name of the candidate *and not initials* must be shown on all papers, and it is important to note that only the name as entered in the educational certificate must be used. Spelling of name should be the same in all the forms as are in the educational certificate or, as will appear in the gazette in case of provisional candidates. No additions to or omissions from that name will be permitted. In the case of Europeans or Anglo Indians the production of a birth or baptismal certificate in support of additional Christian or surname will not be recognized

DATE OF BIRTH.

The date of birth as entered in the application forms must be same as that entered in the educational certificate which must be certified. The production of a birth certificate or horoscope will not be accepted as proof for any change from the date given in educational certificate

GENERAL.

Separate forms should be filled in for each Examination i.e. for Civil Engineer, Overseer or Draftsman classes.

*Particular***MORAL CHARACTER CERTIFICATE.**

It should generally be signed by the Head Master or the Principal of the institution in which the candidate has studied, failing this by a gazetted officer other than the relation of the candidate. The words "last two years" should be crossed out only when the candidate has been in two institutions in which case two separate certificates should be obtained and furnished. These should relate to the period he has been in each institution and the period should be stated.

EDUCATIONAL CERTIFICATE.

A word to word copy of the Intermediate Examination certificate in case of Civil Engineer class and the High School Examination in the case of the Overseer class candidates verified by a government gazetted officer should be furnished. If the candidate has only appeared at the Examination a certificate from the Principal or the Head Master stating that he has appeared at the Intermediate Examination or the High School Examination showing the year in which he has appeared should be furnished. The result of such examinations should be communicated to the Principal as soon as they are published. Full designation of the verifying officer and the date on which he verifies the certificate should be given under his signatures.

MEDICAL CERTIFICATE.

It should be signed by a Commissioned Medical Officer belonging to an all India Service or by an officer in charge of a Civil Station (i.e. Civil Surgeon). A certificate signed by a Medical Officer in charge of a Civil Hospital is not sufficient unless the officer comes within one of the above categories. Marks of identification should be caused to be entered by the medical officer granting the certificate.

If the eye sight is defective the Medical Officer granting the certificate should be requested to quote the paragraph noted on reverse

AGE CERTIFICATE.

It should be signed by the officers named in the form. Name of school from the records of which the date of birth has been entered should be given in the place provided for it. Date of birth should be written and not the word "correct" etc

STATEMENT OF AGE, EDUCATION, ETC.

It should be carefully completed. In column 3 place of domicile of father or if father deceased that of the guardian should be filled in Particulars of father as required in column 5 should be filled fully If father is deceased full Particulars of guardian should be filled in and the fact of the father's death should be stated It should generally be signed by the Head Master or the Principal and place and date to be written in the left hand side One of the certificates at bottom to be crossed out and the other initialled

Where permanent address is required, permanent address should be given and not a temporary one

DOMICILE.

In order to obviate lengthy correspondence all claims to United Provinces domicile should be supported by a certificate from the District Magistrate in the enclosed form. All corrections in the form should be got initialled by the District Magistrate

MADAN GOPAL SARDANA,

ROORKHI

RAI BAHADUR,

October , 1912

Principal.

APPENDICES

Forms required to accompany a candidate's application for admission to the Thomason College, Roorkee, are shown below

- (1) Moral certificate
- (2) Educational certificate *
- (3) Medical certificate
- (4) A certificate of the recorded date of birth
- (5) Statement showing age, education etc , of candidate
- (6) Certificate of Nationality, domicile and residence.

*Copies verified by a Government gazetted officer will be accepted

FORM No 1

Moral Certificate required from candidates for admission to
the Entrance Examination of Overseer Class of the
Thomason College, Roorkee

Certified that _____ bears
a good moral character and has done so for the last two years

STATION _____

*Signature and designation of In-
structor under whom educated,
or superior under whom employed
or brought up*

Date _____

FORM No. 2

Copy of Educational Certificate to accompany application of
candidate for admission to the Thomason College,
Roorkee.

Verified

Signature of any Gazetted Officer of Government.

FORM No 3

Medical Certificate to accompany application of candidate for admission to the Thomason College, Roorkee.

I CERTIFY that I have carefully examined—
 _____, that his eye sight is of the standard prescribed * that he is fully robust, and his constitution is sound, and that he has no disease bodily or mental infirmity unfitting him now or likely to unfit him in the future, for active out door service in the Public Works Department
 Marks of identification

Station _____ Signature _____

Dated _____ Designation _____

N B—The above certificate must be signed by a *Commissioned Medical Officer* or by a *Medical Officer in charge of a Civil Station* within a month before date of submission and must include a description giving clearly the personal marks of identification of the Candidate who has been medically examined. No other certificate will be accepted nor will application be entertained unless the above rules be strictly complied with.

*Please quote the no. of para if the eye sight of the Candidate is according to one of the prescribed paras on reverse

Standard of eye-sight required for admission to the Department of Public Works of India

1 If myopia in one or both eyes exist, a candidate may be passed, provided the ametropia does not exceed 3.5 D, and if, with correcting glasses not exceeding 3.5 D, the acuteness of vision in one eye equals $\frac{6}{3}$, and in the other $\frac{6}{6}$, there being normal range of accommodation with the glasses

2 Myopic astigmatism does not disqualify a candidate provided the lens or the combined spherical and cylindrical lenses required to correct the error of refraction, does not exceed 3.5 D the acuteness of vision in one eye when corrected being equal to $\frac{6}{9}$, and in the other $\frac{6}{6}$, together with normal range of accommodation with the correcting glasses, there being no evidence of progressive disease in the choroid or retina

3 A Candidate having total hypermetropia not exceeding 4 D is not disqualified provided the sight in one eye (when under the influence of atropine) equals $\frac{6}{9}$ and in the other equals $\frac{6}{6}$, and with + 4 D glasses or any lower power

4 Hypermetropic astigmatism does not disqualify, provided the lens or combined lenses required to cover the error of refraction, do not exceed 4 D, and that the sight of one eye equals $\frac{6}{9}$, and the other $\frac{6}{6}$ with or without such lens or lenses

5 A Candidate having a defect of vision arising from nebula of the cornea is disqualified if the sight of one eye be less than $\frac{6}{12}$. In such a case the better eye must be emmetropic. Defects of vision arising from pathological or other changes in the deeper structures of either eye which are not referred to in these rules, may exclude a Candidate

6 A Candidate is disqualified if he be unable to distinguish the principal colours (achromatopsia)

7 Paralysis of one or more of the exterior muscles of the eyeball disqualifies a Candidate for it

FORM No 4

University, College or School Certificate of age required in
case of Candidates for the Entrance Examination of the
Thomason College, Roorkee, United Provinces

Certified that the date of birth of _____,
son of _____ as entered in the records
of the _____ (a)

{	University College School
---	---------------------------------

is _____

Signature of—

STATION
Date

(a)

{	Registrar _____ University Head Master _____ School Principal _____ College
---	---

(a) Two of these to be struck out

FORM No. 6

Statement of age Education, etc. to accompany application for admission to the _____ Class of the
Thomason College Roorkee

Name of candidate	Date of birth as furnished to the highest institution of these three— (1) University (2) College (3) School	Province of domicile of the father, and if father not living, of guardian where he must have definitely settled and resided for a period of three years	School or College at which educated	Name, profession, situation, residence and caste of father, or if father not living, of guardian, showing relationship of latter to candidate	Centre selected in case of candidates of United Provinces for the C. E. Class	Remarks

I am willing to be vaccinated on admission.

Place _____

Date _____

Signature of candidate.

Signature of Head Master or forwarding officer

Permanent address. _____

Certificate in case of candidates for admission to the Overseer Class

Costs of the trip were \$100.00. The trip was made in the month of May.

40

Since seats are reserved in the Civil Engineer and Overseer classes for United Provinces candidates of the minority communities which include depressed classes also, it would be in the interest of the candidates if they give their castes prominently should they belong to any, noted on reverse of the form.

Signature of candidate.

List of castes of the United Provinces included in the "Depressed Classes."

1. Throughout the Province —

Agariya	Hari
Aherya	Hela
Bali	Kanjar
Baluk	Kalabaz
Baheliya	Kharot
Bajaniya	Kharwar (<i>except</i> Benbansi)
Bajji	Khatik
Balahar	Kol
Balmiki	Korwa
Banumanus	Lalbagi
Bansphor	Majhwar
Barwar	Nat
Basor	Pankha
Bawariya	Parahiya
Bidar	Pasi
Beriya	Patar
Bengali	Rawat
Chamar	Saharya
Chero	Sanauriya
Dabgar	Sinsiya
Dhangar	Shilphar
Dhanuk (Bhang)	Bhantu
Dharkar	Kapariya
Dhobi	Bhuiya
Dom	Karwal
Domar	Tharu
Gharani	Bhuyar
Ghasiya	Kharaha
Gaul	Turaha
Habura	Boriya

2 Throughout the Province *except* in the Agra, Meerut and Rohilkhand divisions — Kori

FORM No 7

CERTIFICATE OF NATIONALITY, DOMICILE AND RESIDENCE

Certified that _____

who is candidate for the Entrance Examination for admission
to the Civil Engineer
Overseer
Draftsman class of the Thomason College of
Civil Engineering, Roorkee, resides at _____, District
_____ and is

- (a) a natural born British subject the domicile of origin
of whose father is in the United Provinces and
who himself is domiciled in the United Pro-
vinces;

Or

- (b) a natural born British subject the domicile of origin
of whose father was not the United Provinces,
but who or whose father has acquired a domicile
in the United Provinces provided that the candi-
date himself has, after such acquisition, resided
in the United Provinces for not less than five
years at the date on which he applies for permis-
sion to appear at the entrance examination.

Place _____

District Magistrate,

Dated _____

_____ *District.*

The rules in this Circular which have been approved by Government by letter No G XVIII-31481, dated February 21, 1933, are liable to revision without notice in view of possible changes in the Course of Study, orders of Government, etc.

[C I R C U L A R]

THOMASON COLLEGE OF CIVIL ENGINEERING, ROORKEE.

1942

These rules apply to admissions in 1942 and until further notice

DRAFTSMAN CLASS

1 For admission to the Draftsman Class an entrance examination will be held annually at the Thomason College during the first week of June. Applications for admission must be submitted to the Principal not later than May 1, nor before February 1 preceding. The subjects for the examination will be (1) Arithmetic, (2) English, (3) the preparation of simple drawing scales and italic printing and (4) Geometry and very simple Mensuration. The maximum marks for each subject are 100. The standard in these subjects (except Drawing) will be that of the upper middle section of a Recognized Anglo Vernacular School. The first ten on the list of passed candidates will be selected annually for admission to the Draftsman Class. No entrance fee will be charged for the examination. Indians of

pure Asiatic descent, whose domicile is the United Provinces excluding States within the United Provinces are only eligible for admission to the class. One third of the marks in each subject and one-half of the total marks are required for passing.

2 Candidates for admission to the Draftsman Class must not be under 15 or above 21 years of age on June 1, immediately preceding the entrance examination in which they wish to appear.

3 The minimum qualifying test for permission to appear for the entrance examination will be a pass in the Upper Middle Section of a Recognized Anglo Vernacular School. Candidates must submit a certificate signed by the Head Master of the school in which they have been educated, showing that they possess the minimum educational qualifications and are of good character, industrious and have an aptitude for Drawing.

4 All candidates must furnish a certificate of sound health and physical fitness on the prescribed printed form enclosed in the circular. No other form will be accepted.

NOTE—The fee prescribed by Government for this examination is Rs 4 which must be paid by the candidate direct to the Civil Surgeon or the Commissioned Medical Officer prior to the examination.

Forms of application with instructions showing how they should be filled in may be detached from the circular when required.

5 The entrance examination will take place at the same time as the entrance examinations for other classes in the College and accepted candidates should present themselves for the entrance examination on the date which will be notified to them; all are required to be present on that date, otherwise they will forfeit the right of admission. Their admission will depend on the results of the examination and they should

join the class on October 16 or on the date notified to them

6. Full discretion rests with the Principal to remove any student who appears to be unlikely to profit by the training. A removal under this rule will imply no reflection on the student's character

7. The College session for the Draftsman Class commences on October 16 each year or thereabouts and ends on July 15 in the following year

8. Candidates will pay no fees and will be provided with free quarters, if available, but no member of a candidate's family will be allowed to reside in them with him

9. No stipends will be given, but not more than twelve scholarships of Rs 4 per mensem are available and shall be awarded to the top four students in each session of the Draftsman Class who are eligible and are of United Provinces domicile and that if there be any session's class in which the number of United Provinces eligible students is less than four the unawarded scholarships shall lapse to Government. No scholarship will be payable while a student is on leave or during the vacation. Out of the above scholarships three are reserved for students from the scheduled castes one in each year tenable during the College Session

10. Instruments and materials will be supplied free for the use of students but remain the property of the College, and all work turned out during working hours will also be the property of the College

11. On completion of the course of training students will be granted a certificate as 'Draftsman,' with "qualified in Simple Estimating," in the case of those students only who attain the requisite standard in the subject. The course of training for the Draftsman Class will extend over three years,

but any candidate who gains admission, and, in the opinion of the Principal is initially a good draftsman, may be allowed to join the second year class. The College does not undertake to find employment for successful students, though it will give all the assistance it can. Certificate holders are expected to find employment for themselves in the open market.

12 Any student who is expelled from the College for misconduct will not be allowed to appear in any examination conducted by the College.

13 All students have to be in possession of the booklets of Standing Orders and Course of Study. A plea of ignorance for the breach of any of the former is not accepted. A copy of each of these booklets will be issued to each new student at arrival and the cost recovered in his first bill. Students therefore should not provide themselves with out of date copies.

ROORKEE
October 1942

MADAN GOPAL SARDANA,
Principal

Notes for the guidance of candidates when filling in application forms for Entrance Examination for classes in the Thomason College.

General

IMPORTANCE.

It is impressed upon candidates that failure to observe these instructions implicitly must result in prolonged correspondence and possibly the rejection of the application. All forms when sent to this College should be pinned together. All forms must be kept clean

NAME OF CANDIDATE.

The full name of the candidate *and not initials* must be shown on all papers, and it is important to note that only the name as entered in the educational certificate must be used. Spelling of name should be the same in all the forms as are in the educational certificate or as will appear in the gazette in case of provisional candidates. No additions to or omissions from that name will be permitted. In the case of Europeans or Anglo-Indians the production of a birth or baptismal certificate in support of additional Christian or surname will not be recognized

DATE OF BIRTH.

The date of birth as entered in the application forms must be the same as that entered in the educational certificate which must be certified. The production of a birth certificate or horoscope will not be accepted as proof for any change from the date given in educational certificate

GENERAL.

Separate forms should be filled in for each examination
1. for Civil Engineer, Overseer or Draftsman classes

*Particular***MORAL CHARACTER CERTIFICATE.**

It should generally be signed by the Head Master or the Principal of the institution in which the candidate has studied failing this by a gazetted officer other than the relation of the candidate. The words 'last two years' should be crossed out only when the candidate has been in two institutions in which case two separate certificates should be obtained and furnished. These should relate to the period he has been in each institution and the period should be stated.

EDUCATIONAL CERTIFICATE

A word to word copy of the Intermediate Examination certificate in case of Civil Engineer class and the High School Examination in the case of the Overseer class candidates verified by a government gazetted officer should be furnished. If the candidate has only appeared at the Examination a certificate from the Principal or the Head Master stating that he has appeared at the Intermediate Examination or the High School Examination showing the year in which he has appeared should be furnished. The result of such examinations should be communicated to the Principal as soon as they are published. Full designation of the verifying officer and the date on which he verifies the certificate should be given under his signatures.

MEDICAL CERTIFICATE

It should be signed by a Commissioned Medical officer belonging to an all India Service or by an officer in charge of a Civil Station (i.e. Civil Surgeon). A certificate signed by a Medical officer in charge of a Civil Hospital is not sufficient unless the officer comes within one of the above categories. Marks of identification should be caused to be entered by the medical officer granting the certificate. If the eye sight is

defective the medical officer granting the certificate should be requested to quote the paragraph noted on reverse

AGE CERTIFICATE.

It should be signed by the officers named in the form Name of school from the records of which the date of birth has been entered should be given in the place provided for it Date of birth should be written and not the word "correct" etc

STATEMENT OF AGE, EDUCATION, ETC.

It should be carefully completed In column 3 place of domicile of father or if father deceased that of the guardian should be filled in Particulars of father as required in column 5 should be filled fully If father is deceased full Particulars of guardian should be filled in and the fact of the father's death should be stated. It should generally be signed by the Head Master or the Principal and place and date to be written in the left hand side One of the certificates at bottom to be crossed out and the other initialled

Where permanent address is required, permanent address should be given and not a temporary one

DOMICILE.

In order to obviate lengthy correspondence all claims to United Provinces domicile should be supported by a certificate from the District Magistrate in the enclosed form All corrections in the form should be got initialled by the District Magistrate

ROORKEE.

MADAN GOPAL SARDANA,

RAI BAHADUR,

October , 1912

Principal.

APPENDICES

Forms required to accompany a candidate's application for admission are enclosed in the circular and may be detached when required

- (1) Certificate of character and education, etc (*vide* paragraph 2)
- (2) Medical certificate (*vide* paragraph 3)
- (3) Age certificate
- (4) Statement showing age, education, etc of candidate
- (5) Domicile certificate

FORM No 1

Moral Certificate required from candidates for Admission to the Entrance Examination of Draftsman Class of the Thomason College, Roorkee.

Certified that _____

bears a good moral character, has passed the Upper Middle Section of a Recognized Anglo-Vernacular School, is industrious and has an aptitude for Drawing.

STATION _____ *Signature of Head Master of School*

Date _____ *in which educated.*

FORM No 1

Moral Certificate required from candidates for Admission to the Entrance Examination of Draftsman Class of the Thomason College, Roorkee.

Certified that _____
bears a good moral character, has passed the Upper Middle Section of a Recognized Anglo Vernacular School, is industrious and has an aptitude for Drawing.

STATION _____ *Signature of Head Master of School*
Date _____ *in which educated.*

FORM No 2

Medical Certificate to accompany application of candidate for admission to the Thomason College, Roorkee.

I CERTIFY that I have carefully examined———, that his eye sight is of the standard prescribed* that he is fairly robust, and his constitution is sound, and that he has no disease, bodily or mental infirmity unfitting him now or likely to unfit him in the future, for active out-door service in the Public Works Department

Marks of identification

Station———

Signature———

Date———

Designation———

NB—The above certificate must be signed by a Commissioned Medical Officer or by a Medical Officer in charge of a Civil Station within a month before date of submission and must include a description giving clearly the personal marks of identification of the Candidate who has been medically examined. No other certificate will be accepted, nor will application be entertained unless the above rules be strictly complied with

*Please quote the no. of para. if the eye sight of the Candidate is according to one of the prescribed para. on reverse

Standard of eye-sight required for admission to the Department of Public Works of India

1 If myopia in one or both eyes exist, a Candidate may be passed provided the ametropia does not exceed 3.5 D, and if with correcting glasses not exceeding 3.5 D, the acuteness of vision in one eye equals $\frac{6}{9}$ and in the other $\frac{6}{6}$, there being normal range of accommodation with the glasses.

2 Myopic astigmatism does not disqualify a Candidate provided the lens or the combined spherical and cylindrical lenses required to correct the error of refraction, does not exceed 3.5 D the acuteness of vision in one eye when corrected being equal to $\frac{6}{9}$, and in the other $\frac{6}{6}$ together with normal range of accommodation with the correcting glasses, there being no evidence of progressive disease in the choroid or retina.

3 A Candidate having total hypermetropia not exceeding 4 D is not disqualified provided the sight in one eye (when under the influence of atropine) equals $\frac{6}{9}$, and in the other equals $\frac{6}{6}$, and with + 4 D glasses or any lower power.

4 Hypermetropic astigmatism does not disqualify, provided the lens or combined lenses required to cover the error of refraction do not exceed 4 D, and that the sight of one eye equals $\frac{6}{9}$, and the other $\frac{6}{6}$ with or without such lens or lenses.

5 A Candidate having a defect of vision arising from nebula of the cornea is disqualified if the sight of one eye be less than $\frac{6}{9}$. In such a case the better eye must be emmetropic. Defects of vision arising from pathological or other changes in the deeper structures of either eye, which are not referred to in these rules, may exclude a Candidate.

6 A Candidate is disqualified if he be unable to distinguish the principal colours (achromatopsia).

7 Paralysis of one or more of the exterior muscles of the eyeball disqualifies a Candidate for it.

FORM No 3

University, College or School Certificate of age required in case
of Candidates for the Entrance Examination of the
Thomason College, Roorkee, U. P.

Certified that the date of birth of _____
son of _____ as entered in the records
of the _____ (a) { University
College
School
is _____

Signature of—

STATION { Registrar _____ University.
Date (a) { Principal _____ College.
Head Master _____ School.

(a) Two of these to be struck out

FORM No 4

Since seats are reserved in the Civil Engineer, and Overseer classes for United Provinces candidates of the minority communities which include depressed classes also, it would be in the interest of the candidates if they give their caste prominently should they belong to any, noted on reverse of the form

Statement of Age, Education etc, to accompany application for admission to the _____ Class of the Thomason College, Roorkee

Name of candidate	Date of birth as furnished to the highest institution of these three— (1) University, (2) College, (3) School	Province of domicile of the father, and if father not living of guardian where he must have definitely settled and resided for a period of three years	School or College at which educated	Name, profession, situation, residence and caste of father or if father not living of guardian, showing relationship of latter to candidate	Centre selected in case of candidates of United Provinces for the C E Class	Remarks

I am willing to be vaccinated on admission

Place _____

Date _____

Signature of candidate

Signature of Head Master or forwarding Officer

Permanent address {

e Overseer Class
ree months in the

which is to be crossed

Signature of candidate.

FORM No 3

University, College or School Certificate of age required in case
of Candidates for the Entrance Examination of the
Thomason College, Roorkee, U. P.

Certified that the date of birth of _____
son of _____ as entered in the records
of the _____ (a) { University
College
School
is _____

Signature of—

STATION

Date

(a) { Registrar _____ University.
Principal _____ College.
Head Master _____ School.

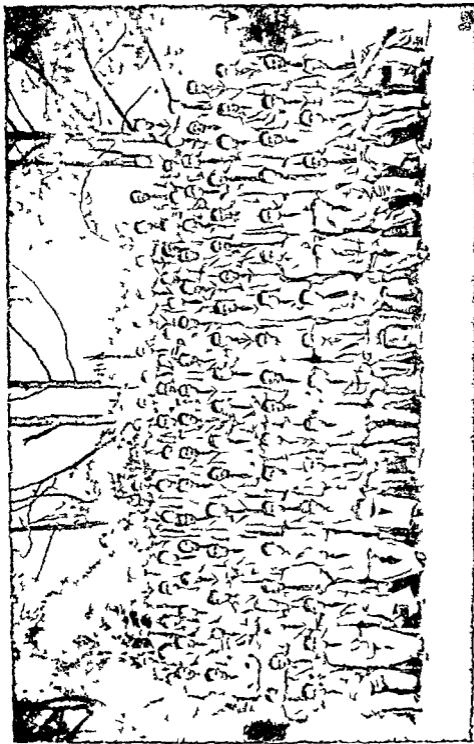
(a) Two of these to be struck out.

List of castes of the United Provinces included in the "Depressed Classes."

1 Throughout the Province —

Agariya	Hari
Aheriya	Hela
Badi	Kanjar
Badhuk	Kharot
Biheliya	Kharwar (except Bonbansi)
Bajaniya	Khatik
Bijgi	Kol
Balahar	Korwa
Balmiki	Lalbegi
Banmanus	Majhwar
Bansphor	Nat
Barwar	Pankha
Basor	Parahiya
Bawariya	Pasi
Beldar	Patar
Beriya	Rawat
Bengali	Saharya
Chamar	Sansaurhiya
Chero	Sansiya
Dabgar	Shilpkar
Dhangar	Kalabaz
Dhanuk (Bhang)	Bhantu
Dharkar	Kapariya
Dhobi	Bhuiya
Dom	Karwal
Domar	Tharu
Gharami	Bhuiyar
Ghasiya	Kharaha
Gaul	Turaiha
Habura	Boriya

2. Throughout the Province *except* in the Agra, Meerut and Rohilkhand divisions — ~~Kori.~~



CIVIL ENGINEER CLASS
1911 '92

COURSE OF STUDY AND SYLLABUS

CIVIL ENGINEER CLASS, 1942-43.

THE chief points kept in view in arranging this course of study are, to ensure the necessity for steady work throughout the whole course and to co ordinate the instruction given in each subject so as to lead up to a thorough test of the qualifications necessary for a Civil Engineer of as high a grade as a college training can produce, special attention being paid to the local conditions of India. This test is represented by the Project and the Final Examinations.

Four-tenths of the total marks at the end of the 1st year are carried forward in each group to the 2nd year. Similarly, seven tenths of the total marks at the end of the 2nd year are carried forward to the 3rd year. Continuous steady work is necessary to ensure qualification at the end of each year.

TERMS AND EXAMINATIONS.

First Term—

College Attendances —From October 16 to a variable date in February

Mid-Sessional Examinations —For students of all the 3 years start in the last week of January

Second Term—

College Attendances.—Start on the Monday following the Mid-Sessional Examinations and continue till about the first Saturday in June.

Revision in Quarters.—During Entrance Examinations

Final Examinations.—Start in the last week of March.

The Course of Study extends over three years and comprises the following subjects grouped under seven heads :—

Group	I	.. Mathematics
"	II	.. General Civil Engineering
"	III	.. Special Civil Engineering.
"	IV	.. Applied Science.
"	V	.. Mechanical and Electrical Engineering.
"	VI	.. Projects
"	VII	.. Physique and General Fitness

The marks each student has to obtain to qualify for admission to the second and third year, and to obtain the College Diploma in Civil Engineering, awarded upon completion of his third year are as follows :—

(a) For admission to the second year, the first-year students are required to obtain 33 per cent. of the marks allotted to each Sub-Group for written examinations and practical work respectively and 50 per cent. of the total marks.

(b) To return to the College at the end of the second year the students are required to obtain 33 per cent. of the marks allotted to each Sub-Group for written examinations and practical work respectively in that year (i.e. in the second year); and 50 per cent. of the total marks for the two years, i.e. of the full marks for the second year together with the reduced marks of the first year.

- (c) To pass out of the College at the end of the third year, the students are required to obtain 33 per cent of the marks allotted to each Sub Group for written examination and practical work respectively in that year (i.e. the third year), and 50 per cent of the total marks for the three years i.e. of the full marks for the third year together with the reduced marks for the first and second years
- (d) The Ordinary Diploma is awarded to students who qualify as above and obtain less than 66 per cent of the total marks

The Honours Diploma is awarded to students who qualify as above and obtain 66 per cent or more of the total marks

Students who fail in any year will be allowed to repeat their course provided their stay in the College does not exceed four years on condition that such a student will not be eligible for academic prizes, scholarships or guaranteed appointments

Cases of failures due to prolonged absence through sickness or circumstances beyond the students control will be considered and decided upon their merits

The Examinations and the marks assigned to them, are shown on the following pages

EXAMINATION AND MARKS

THEORETICAL

(1st term)		(2nd term)	
	Marks		Marks
Strength of Materials	50	Strength of Materials	100
Mathematics	50	Mathematics	75
Mechanics	50	Mechanics	100
Building Construction	50	Graphic Statics	50
Physics	75	Building Construction	100
Chemistry	75	Drawing	100
Mechanical Engineering		Physics	75
(Prime Movers)	50	Chemistry	75
Survey	50	Mechanical Engineering	
		(Prime Movers and Theory	
		of Machines)	100
		Communications	100
	<hr/> 450 <hr/>		<hr/> 875 <hr/>

PRACTICAL

Mechanics Laboratory	50	Mechanics Tutorial	50
Levelling	50	Physics Practical Examination	100
		Chemistry	100
		Field Engineering	50
		Drawing Plates	300
		Workshops	150
		Machine Drawing Plates	50
		Chain Survey	50
	<hr/> 100 <hr/>		<hr/> 850 <hr/>

TOTALS

			Marks
Practical	.	.	950
Theoretical	..	..	1,325

2,275

EXAMINATION AND MARKS

THEORETICAL

(3rd term)		(4th term)	
	Marks		Marks
Strength of Materials and Theory of Structures	100	Mathematics	100
Mathematics	75	Mechanics	100
Mechanics	100	Theory of Structures	100
Hydraulics	100	Design of Structures (building and bridges)	100
Communications	100	Reinforced Concrete	100
Machine Drawing	50	Irrigation	100
Prime Movers	50	Hydraulics	100
Theory of Machines	50	Estimating	100
Electrical Engineering	100	Survey	100
Geology and Mineralogy	75	Water Supply and Sanitary Engineering	100
		Prime Movers and Theory of Machines	100
		Electrical Engineering	100
	<hr/> 800		<hr/> 1 200

PRACTICAL

Survey Camp	250	Mathematics Tutorial	50
Machine Drawing plates	50	Mechanics Tutorial	50
Geology Practical Examination	75	C F Designs (Structures Hydraulics R C and Irrigation)	300
Electrical Engineering Laboratory	50	Hydraulics Laboratory	50
Testing laboratory (strength of materials to be awarded in the workshops)	50	Mechanical Engineering Laboratory	100
		Electrical Engineering Laboratory	100
	<hr/> 475		<hr/> 650

TOTALS

	Marks
First year, carried forward (4/10 of 2275)	910
Second year	3,125
	<hr/>
Grand Total	4,035

EXAMINATION AND MARKS

THEORETICAL

(5th term)		(6th term)	
	Marks		Marks
Theory and Design of Structures (Buildings)	100		
Theory and Design of Structures (Bridges)	100		
Reinforced Concrete	100		
Irrigation	100		
Survey I	100		
Survey II	100		
Water Supply and Sanitary Engineering	100		
Prime Movers	100		
Theory of Machines	100		
Electrical Engineering	100		
	<u>1,000</u>		

PRACTICAL

C E Designs (Structures, Irrigation and Reinforced Concrete)	300	Minor Project ..	300
Notes on Visits to works	50	Major Project ..	700
Astronomy and Curves (Practical Examination)	100	Games and Sports. U. T. C	800
Process Work	50		
Mechanical Engineering Laboratory	50		
Electrical Engineering Laboratory	50		
	<u>600</u>		<u>1,800</u>

TOTALS

	Marks
First and second years' marks (7/10 of 4035)	2,825
Third year's marks	1,600
Projects	1,000
Physique and General Fitness	80
	<u>6,225</u>

APPENDIX B
Statement of hours and marks on 32 hours a week basis

S no	Groups	Sub groups	Subject	Number of hours per week						Total	Number of marks allotted
				I	II	III	IV	V	VI		
1	Mathematics		Term	13	16	10	16	17	10		
			Weeks								
			Mathematics Mechanics Strength of Materials	3½ 5 1½	2½ 3 2	2 2 2	1 2 1			12½ 165 87½	350 550 250
2	General Civil Engineering	(a) Theory and Design of Structures	Theory of Structures			3	1½	2		88	250
			Design of Structures				6	6		198	450
			Reinforced Concrete				2	4		100	300
		(b) General	Building Construction	2	2½					60	250
			Estimating			1½	1½			39	100
			Survey Drawing	4 5	1 7	6	1	2½		186½ 177	800 450
3	Special Civil Engineering.		Hydraulics			1½	4			79	350
			Irrigation				1½	4		92	350
			Water Supply and Sanitary Engineering				2	3		83	200
			Communications		2½	2½				65	200
			Minor and Major Projects 8 and 7 weeks respectively								

Statement of hours and marks on 32 hours a week basis — (conclud d)

S no	Groups	Sub groups	Subject	Number of hours per week						Total	Number of marks allotted
			Term Weeks	I	II	III	IV	V	VI		
4	Applied Science		Physics Chemistry Geology and Mineralogy	13 3½ 3½	10 3 1	10 3	10 3	17 4½	10 3 Minor and Major projects and 1 wk. resp. civ. ly	93½ 101½ 45 }	250 400 700
5	Mechanical and Electrical Engineering		Prime Movers Heat Engines and Theory of Machines Machine Drawing Electrical Engineering Workshops	2 2 4	2 2 2	4 2½ 2	4 4½	4½	4 4	57 160 84	150 500 150
6	Projects		Civil Engineering Projects	34	34	32	32	30+2 hrs	2328	2328	1000
7	Physical Fitness								Astronomy practical at night		800

Group I.—MATHEMATICS.

- (i) Plane Co-ordinate Geometry.
- (ii) Solid Geometry
- (iii) Calculus
- (iv) Differential Equations
- (v) Mechanics
- (vi) Graphics

MATHEMATICS.

(First Term—3½ hours weekly)

Plane Co-ordinate Geometry.—Equations of straight lines and circles; simple properties of conics equations of the second degree

Calculus.—Limits, derivatives, standard forms, rules for differentiation, successive differentiation, differentials and small errors, signs of the derivative, mean value theorem; extrema for functions of one variable Integration as inverse of differentiation, standard forms simpler methods of integration

(Second Term—2½ hours weekly)

Elementary Solid Geometry.—Simple relations of planes; straight lines and spheres elementary treatment of simple surfaces of revolution

Calculus.—Partial and total differentiation Elementary definite integrals Application of the derivative to plane curves referred to rectangular and polar coordinates; intersection of lines and curves; tangents; normals; asymptotes; points of inflections, tracing of sim

(Third Term—2 hours weekly)

Calculus.—Definite integrals (continued), quadrature and rectification of curves, intrinsic equations, volumes and surface areas of solids of revolution Approximate integration Simpson's rule

Elementary Differential Equations.—Formation, equations of the first order and first degree, integrating factors

(Fourth Term—1 hour weekly)

Linear differential equations of the first order, Clairaut's form Linear differential equations with constant coefficients, particular integrals and their determination in simple cases Some simple applications

MECHANICS

(First Term—5 hours weekly)

Statics —Coplanar forces acting on a rigid body, moment of forces, friction, conditions of equilibrium, centres of gravity

Graphical Methods.—Triangle and polygon of forces, funicular polygons, stresses in just rigid and pin joined frames

Dynamics.—Relative velocities, tangential and normal velocities and accelerations, simple harmonic motion

Mechanics Laboratory.—Work in the Mechanics laboratory is an integral part of the course The experiments are designed to illustrate the principles of elementary mechanics to give practice in the use of apparatus and in accurate measurement

(Second Term—3 hours weekly)

Statics.—Work, principle of virtual work; deflections of just rigid and pin joined frames; displacement diagrams and Mohr's rotation or correction diagrams

Hydrostatics.—Static pressure and static head, gauge and absolute pressure, units, total hydrostatic pressure on immersed surfaces, centres of pressure of plane areas, conditions of equilibrium of floating bodies metacentric heights

Dynamics—Laws of motion, angular momentum, moments of inertia

(Third Term—2 hours weekly)

Dynamics.—Equations of motion, principles of energy and momentum, motion along a curve, motion about a fixed axis Impulsive motion

(Fourth Term—2 hours weekly)

Simple problems in forces in three dimensions Lagrangean equations and allied problems

Stability of systems with one degree of freedom flexible chains Motion in resisting media Vibrations of systems having one degree of freedom including vibrations of beams whirling of shafts vibrations due to torsion etc etc

Group II.—GENERAL CIVIL ENGINEERING.

- (i) Strength of Materials
- (ii) Theory of Structures
- (iii) Design of Structures
- (iv) Theory and Design of Reinforced Concrete
- (v) Building Construction
- (vi) Drawing
- (vii) Engineering Specifications and Quantities

STRENGTH OF MATERIALS.

(First Term—1½ hours weekly)

Physical properties of the common materials used in Engineering Relation of stress and strain, stress—strain diagrams; Young's modulus, complementary shear stress, modulus of rigidity, extension and lateral contraction, Poisson's ratio, composite bars, temperature stresses Stresses in cylindrical and spherical shells Resilience Stresses due to suddenly applied loads

(Second Term—2 hours weekly)

Principal and combined stresses Relation between elastic constants Euler-Bernoulli Theory of bending of straight beams Distribution of shear stress in beams Torsion of circular shafts Stress and deflection of close coiled helical springs

Graphical and analytical methods for calculating bending moments and shearing forces due to dead loads in statically determinate beams

(Third Term—2 hours weekly)

Curvature, slope and deflection of simply supported beams and cantilevers graphical methods and deflection curves; simple theory of struts subject to axial and eccentric loads, empirical strut formulae

Testing Laboratory.—Phenomena in tests to destruction in tension, compression, shear and torsion Leuder lines; elastic limit, ultimate strength, ductility Forms of test pieces and devices for holding them, influence on strength and percentage extension Testing machines and instruments Methods employed for deducing most probable values of elastic constants from various tests Effect of hardening, tempering, annealing and over strain hardness and resistance to shock and their measurement, fluctuating and impact stresses, fatigue and fatigue tests Theories of strength

(Fourth Term—1 hour weekly)

Further problems in deflection of simply supported beams and struts, combined bending and direct stresses, eccentric loads, torsion combined with bending

THEORY OF STRUCTURES.

(Third Term—3 hours weekly)

Bending moments and shearing forces due to travelling loads in beams and plane frames Influence Lines Theory of riveted joints Theory of Earth pressure and foundations; stability of masonry and brickwork structures like retaining walls, gravity dams and arches

(Fourth Term—1½ hours weekly)

Bending moments, shearing forces, curvature, slope and deflection of encastre' and continuous beams Theory of hinged and rigid arches

(Fifth Term—2 hours weekly)

Strain energy analysis Theory of suspension bridges Theory of bents, struts with lateral loads and end moments Stresses in thick cylinders Further problems in the Theory and Design of Structures

DESIGN OF STRUCTURES

(Fourth Term—3 hours weekly)

Buildings —Roof Trusses —Various types of trusses consideration of loads, wind pressure, Materials and coverings employed Determination of sizes of various members

Foundations —Methods for finding out the bearing capacity of soils Trial pits and borings Footings Grillage foundations

Masonry retaining walls Masonry and steel chimneys

Masonry and steel reservoirs

(3 hours weekly)

Bridges —Preliminary —Selection of site, Calculation of Waterway, Piers, Various types of foundations depth of scour, Protection works, Floor and curtain walls Various types of Temporary and Permanent Bridges

Superstructures —Consideration of loads impact wind pressure Masonry bridges and culverts Plate girder, types of floors

(Fifth Term—3 hours weekly)

Buildings.—Design of a redundant frame Influence line diagrams for fixed and continuous beams, three pinned parabolic, semi-elliptic and segmental arches

Design of a masonry and a R C dome

(3 hours weekly)

Bridges.—Lattice girder swing bridges, steel arched bridges, Lateral and sway bracings Suspension bridges

THEORY AND DESIGN OF REINFORCED CONCRETE.

(Fourth Term—2 hours weekly)

Nature, uses, properties, advantages and disadvantages of Reinforced Concrete over other types of construction Theory and design of rectangular and T beams with single reinforcement, simply supported Shear and diagonal tension shear reinforcement Bond Slabs simply supported Columns axially loaded

(Fifth Term—4 hours weekly)

Doubly reinforced beams continuous beams Slabs continuous on two and four sides Combined bending and direct stresses

Design of slab and beam floors, columns eccentrically loaded Rigid frames Column footings combined footings piles, reinforced concrete pipes, rafts Retaining walls Reservoirs Investigation of stresses in reinforced concrete arches Reinforced brickwork, design of beams, floors and walls Details of construction of Reinforced Concrete and Reinforced brickwork, centering, shuttering and laying.

(Fourth Term—1½ hours weekly)

Bending moments, shearing forces, curvature, slope and deflection of encastre' and continuous beams Theory of hinged and rigid arches

(Fifth Term—2 hours weekly)

Strain energy analysis Theory of suspension bridges Theory of bents, struts with lateral loads and end moments Stresses in thick cylinders Further problems in the Theory and Design of Structures

DESIGN OF STRUCTURES

(Fourth Term—3 hours weekly)

Buildings.—Roof Trusses —Various types of trusses, consideration of loads, wind pressure, Materials and coverings employed Determination of sizes of various members

Foundations.—Methods for finding out the bearing capacity of soils Trial pits and borings Footings, Grillage foundations

Masonry retaining walls Masonry and steel chimneys

Masonry and steel reservoirs

(3 hours weekly)

Bridges.—Preliminary —Selection of site, Calculation of Waterway, Piers, Various types of foundations, depth of scour, Protection works, Floor and abutment walls Various types of Temporary and Permanent Bridges

Superstructures.—Consideration of loads impact, wind pressure, Masonry bridges and culverts, Plate girder, types of floors

(Fifth Term—3 hours weekly)

Buildings —Design of a redundant frame Influence line diagrams for fixed and continuous beams three pinned parabolic semi-elliptic and segmental arches

Design of a masonry and a R C dome

(3 hours weekly)

Bridges —Lattice girder swing bridges steel arched bridges Lateral and sway bracings Suspension bridges

THEORY AND DESIGN OF REINFORCED CONCRETE

(Fourth Term—2 hours weekly)

Nature uses properties advantages and disadvantages of Reinforced Concrete over other types of construction Theory and design of rectangular and T beams with single reinforcement simply supported Shear and diagonal tension shear reinforcement Bond Slabs simply supported Columns axially loaded

(Fifth Term—4 hours weekly)

Doubly reinforced beams continuous beams Slabs continuous on two and four sides Combined bending and direct stresses

Design of slab and beam floors columns eccentrically loaded Rigid frames Column footings combined footings piles reinforced concrete pipes rafts Retaining walls Reservoirs Investigation of stresses in reinforced concrete arches Reinforced brickwork design of beams floors and walls Details of construction of Reinforced Concrete and Reinforced brickwork centering shuttering and laying

BUILDING CONSTRUCTION.*(First Term—2 hours per week)*

Materials.—*Stone*—Classification and varieties Characteristics Suitability for structures Quarrying, blasting and dressing

Bricks, tiles, firebricks and terra cotta—Composition of of earth Moulding, drying and burning Characteristics and essential features

Lime and cement—Methods employed in manufacture Essential features British standard specifications for cement

Timber—Growth and structure Felling, converting and seasoning Decay and methods of preservation Common defects Characteristics of timber commonly used in India

Miscellaneous—Preparation of mortars Mixing, laying and curing concrete Plastering and pointing White and colour washing Other building materials such as asbestos and galvanized iron sheets, slates lead, copper, brass, paints, varnishes, distempers, etc

Masonry.—*Stone masonry*—Definitions of terms in common use Ashlar, block-in-course and rubble masonry Precautions against settlement Arches

Brick work—General principles and precautions Bonds Arches

(Second Term—2½ hours weekly)

Carpentry and Joinery.—Joints and fastenings Beams Wooden floors, partitions, doors, windows, centres and staging

Roofs and Floors—*Timber, steel and flat roofs* Roof coverings of tiles, slabs, galvanized iron and asbestos sheets Brick, stone, tiled and concrete floors

Miscellaneous—Flues and chimneys Stairs and stair cases Painting and decorations Fire resisting and sound

proof construction. Heating and cooling of buildings. Electrical installations and lifts Lightning conductors

Field Engineering.—Use of spars Knots and lashings. Blocks and tackle Holdfasts, guys and winches Use and construction of derricks, gyps and trestles Ganttries. Scaffolding shoring, underpinning and centering Ground, tracing Working plans for foundations on level and sloping ground Laying out buildings on the ground

SURVEYING.

(First Term—4 hours weekly)

Levelling.—The use and adjustment of the level Different types of levels Levelling staves their types and markings Precautions required in levelling methods of booking and reductions of levels Comparative merits of reduction methods Definitions of terms used in levelling Sources of error Curvature and refraction effects Differential levelling Profile levelling Reciprocal levelling Allowable closing error The Abney level Boning rods

The students will do practical levelling in the fields

(Second Term—1½ hours weekly)

Chain Surveying.—Equipment Ranging and chaining lines Engineer's chain Gunter's chain Customary limits of error Reconnaissance Selection of Stations Keeping up the Field Book Obstacles to chaining and ranging, how overcome Offsets Optical square Plotting the Survey.

Compass Survey.—The Prismatic Compass, Constructional details and its uses Bearings and angles Magnetic and True meridian Obtaining meridian by sun's shadow. Variation of the compass Designation of bearings Comparative merits of whole circle and quadrantal reckoning.

Back bearings Local attraction Elimination of effects of local attraction Sources of error Limits of precision Adjustment of closing error

The student will prepare a Chain and Compass Survey plate of a small area

The Theodolite — Various parts, their uses and adjustments Measurements of horizontal and vertical angles Repeating angles changing faces Errors in its use and their elimination

(Third Term—8 hours weekly)

Theodolite Traversing — Definition of a Traverse Gale's Traverse system Conditions fulfilled in a closed traverse Methods of traversing by inward angles and by bearings Relative merits of these methods Computations for obtaining co-ordinates Closing error and its adjustment Bowditch's rule for adjustment Advantages of plotting by co-ordinates Precautions in plotting Omitted measurements and their calculations The subtense bar and its use

Plane-Tabling — Equipment for plane tabling Advantages and disadvantages Order of working methods of plane tabling Fixing of position The three point problem The two point problem Traversing with the plane table

Contours and Contouring — Representation of three dimensions Uses of contour plans and maps Contour lines Contour interval Characteristics of contours Methods of contouring Direct method Indirect methods Interpolation of contours

The students will prepare a plate employing the use of theodolite traverse, plane table and contours

Minor Triangulation — Grades of triangulation Length of base line Connection of base line to triangulation Selection of stations Reconnaissance Signals and brief descriptions Base line measurements and corrections applied to same Brief description of rigid and flexible base line measuring apparatus as used in Geodetic surveys Observation of angles Zero station Setting to Zero Change of zero Cautions observed in taking a round of angles Recording observations Intersected points Heights Computations Supplementary and satellite stations Completion of Traverse

At the end of the 3rd term students will be taken into camp for three weeks and do a minor triangulation and fill in details with the plane table using the Tangent clinometer for heights and contouring

(Fourth Term—1 hour weekly)

Curves —Designation of curves Elements of curves Different methods of setting out curves Simple and compound curves Vertical curves Transition curves Double centre method for laying down a straight line Setting out pegs for earthwork Application of curves to highways and railways

Tacheometrical Surveying —Stadia system Principle of Tacheometer Determination of constants Distance and elevation formulae Horizontal sights Inclined sights with staff vertical Internal focussing telescope in Tacheometry Instrumental constants Tangential system

(Fifth Term—4½ hours weekly)

Field Astronomy —Introduction The earth as an astronomical body The celestial sphere Definitions Astronomical system of co-ordinates Spherical trigonometry

and formulae as required for practical astronomy Napier's rule of circular parts Use of the Nautical Almanac Time Sidereal, apparent and solar Equation of time Relation between mean and sidereal time Acceleration and retardation Relation between time and longitude Standard time

Time by ex meridian observations Time by meridian transit Time by equal altitudes of a star Time by altitude of the sun Corrections to observations

Azimuth Azimuth by ex meridian observations Azimuth by a circumpolar star at elongation Azimuth by Polaris, time and latitude being known Azimuth by observations to sun Convergency correction how applied

Latitude Determination of latitude by various methods Longitude Determination of longitude by various methods Sun dials Description and use How made.

General Engineering Surveys—Surveying requirements when preparing a project for a building, bridge, road, canal or railway

DRAWING COURSE

(First Term—5 hours weekly)

Manipulation of Draftsman's instruments Lettering Mouldings Conventional signs Symbols and colours Colouring Projections Orthographic Isometric and Perspective Intersection of planes Interpenetration of solids Development of surface Drawing of simple details of buildings

(Second Term—7 hours weekly)

Drawing of building and engineering constructional details Taking measurements of actual buildings and drawing

plans, elevations, and sections of same Drawing plans elevations, Sections to $\frac{1}{8}"$ scale from general specifications and freehand sketches

ENGINEERING SPECIFICATIONS AND QUANTITIES.

(Third Term—1½ hours per week)

Taking off quantities required for engineering structures, abstracting and billing Estimating quantities of earthwork in roads, canals, etc

(Fourth Term—1½ hours per week)

Plinth area and cubical contents estimates Analysis of rates for common items of construction General and detailed specifications

Contract —The preparation of tenders and the invitation for same Various kinds of contracts, and the documents required for each kind Preparation of running bills and final bills, measurement books and their use Completion plans.

Group III.—SPECIAL CIVIL ENGINEERING.

- (i) Hydraulics
- (ii) Irrigation
- (iii) Water Supply
- (iv) Sanitary Engineering
- (v) Communications

HYDRAULICS.

(Third Term—1½ hours weekly)

Irrigation —Various modes of fluid motion Principle of continuity Velocity of discharge from small orifices Hydraulic head Coefficients of velocity, contraction and discharge Bernoulli's theorem Venturi meter Pitot tube Flow through large orifices, free and submerged Flow over rectangular, triangular and trapezoidal notches and weirs Velocity of approach Francis formula for weir Cippoletti Weir Broad Crested weir Flow under a variable head

Viscous and turbulent flow Critical velocity Rate of discharge under viscous flow Laws of fluid friction Coefficient of surface friction Hydraulic gradient Loss of head in pipes due to friction Secondary losses due to sudden enlargement, sudden contraction and other causes Discharge through mouth pieces Formulae for turbulent flow Parallel flow through pipes Transmission of power through pipes Nozzles Diameters of pipes for maximum kinetic energy of jets General formula for flow of water in open channels Channel Cross sections of greatest efficiency

(Fourth Term—4 hours weekly)

Irrigation—General theory of flow of water in open channels Uniform and non uniform flow Critical depth Chezy Bazin, Manning and Kutter formulae Application to design of canals and distributaries Silt transportation formulae and their application to design of regime channels Theory of scour as applied to rivers Flow through syphons Falls free and drowned Notches on falls Water cushions Afflux and back water curves Standing wave and its height Flood absorptive formulae in tanks Overflow Weirs. Modules Methods of gauging discharges in channels

Power—Utilization of water as a source of power Hydraulics of power plants from source of delivery to turbine.

Water Supply.—Darcy, Chezy, Bazin and Kutter formulae for turbulent flow under working conditions Limiting, mean and critical velocities Distribution of velocities in pipes and relation between diameter and discharge Economical diameter of pipe lines Initiation and stoppage of motion in a pipe Water hammer and surge chambers Losses at bends, elbows and tees Time of discharge through long pipe lines, branch mains, and multiple supply Flow through bye pass and pipes coupled in parallel Meters, syphons pitometer pumps, rams, air valves, relief valves, etc Calculation of compensation water Dimensional homogeneity and dynamical similarity

Hydraulic Machines—Pressure of jets on stationary and moving plates Pressure on curved vanes Work done by jets on moving blades Work done by reaction of jets Reciprocating, centrifugal and turbine pumps Pelton wheel Inward and outward flow turbines Impulse and reaction turbines Description of different types of turbines Determination of vane angles Efficiencies of turbine plants. Governing Rams Mills Hydraulic lifts and brakes

IRRIGATION

(Fourth Term—1½ hours weekly)

Earthwork —Definitions, stability and properties of soils
Measurement and setting out Sections and volumes
Drainage Puddling Consolidation Dressing and turfing
Lift and Lead

Irrigation —Definition of irrigation Conditions necessitating its introduction Principal Indian crops their seasons and benefits derived from irrigation Depth of water required to ensure maturity

Wells —As a source of irrigation lined and unlined wells Sub oil water reservoirs Duty of wells Tube wells

Canals —Perennial canals Duty of canal water Depths and running days Supplies utilized and lost Silt and its effect on irrigation channels its prevention Kennedy channels Design of channels from Garretts diagrams Evaporation absorption and percolation Rise in subsoil water level Water logging Lining of canals

Inundation canals general description and their special features Location of off take to avoid silting

(Fifth Term—4 hours weekly)

Perennial canals —Sources of supply General description of Indian rivers Location and design of headworks in boulder trough and delta stages of a river Description and general design of Headworks Weirs and Undersluices Head regulators Supply Channels Afflux bunds Temporary diversion bunds Various types of permanent weirs Drop shutters Automatic gates Stony sluice gates

Design and Alignment of Canals —Locating watersheds and aligning canals Falls Bridges Regulators Locks Escape Roads Distributaries and Minors Outlets

Cross drainage works —Maximum rate of run off from catchments Inlets Superpassages Level Crossings Aqueducts Syphon Reservoirs

River training works —Spurs Groynes Bell bunds Mattresses Aprons

Storage Works —Tanks Total run off from catchments Flank Escapes Outlets sluices Reservoirs for storage of water Earthen dams Theory and design of masonry dams and weirs Dams with discharge sluices Syphon dams Escapes Flood absorptive capacity of reservoirs

WATER SUPPLY

(*Fourth Term—2 hours per week*)

Water Supply —History and development Sources of supply Standard of purity for public water supplies Quantity supplied *per capita* Intakes Pumping and gravity schemes Water towers Purification, Slow and rapid filtration Sterilization Softening Pipes, fittings and appurtenances Distribution of water Detection and prevention of waste Metering Rules for framing water supply schemes

(*Fifth Term—3 hours per week*)

Sanitary Engineering —*Sanitation* —Site and orientation of buildings Damp-proof courses Ventilation Air conditioning House drainage Conservancy and water borne systems Sanitary appliances Construction and testing of house drains Pail depots Public latrines and urinals

Prevention of malaria incidental to engineering construction

Sewerage —Separate and combined systems Forms cross sections, capacities and inclinations of sewers

Construction of sewers Calculation of storm water Storm water overflows Lifts, ejectors and pumps for sewage Manholes and lamp eyes Flushing of sewers Rules for the design of sewerage and drainage systems in India

Sewage disposal —Essentials in the treatment of sewage Selection of site for disposal works Disposal by dilution and land treatment Simple sedimentation, chemical precipitation and bacterial tanks Activated sludge process Sludge disposal

Refuse —Collection and disposal of refuse

Specifications —Specifications for the construction of sanitary works

COMMUNICATIONS.

(*Second Term—2½ hours per week*)

Roads —History and development Alignment Traffic census and cross sections Gradients Curves Subsoils, under drainage soling and formation Earth *kankar* and stone roads Temporary roads Hill roads Collection and tests for materials Dust prevention Bitumen, asphalt, tar and cement roads Pavements Wear and maintenance of roads Road construction machinery Preparation of road projects Arboriculture

(*Third Term—2½ hours per week*)

Railways —History and development Alignment Preliminary investigations Reconnaissance Preliminary and location surveys Grades Cross sections in embankment and cutting Curves The gauge problem Formation, ballast, sleepers, rails joints and fastenings Points and

crossings Plate laying Railway bridges Level crossings
Tunnels Station requirements and layout Wear of rails
Creep of rails Mountain railways Maintenance of the
permanent way Rules for preparation of railway projects.

Group IV.—APPLIED SCIENCE.

- (i) Physics
- (ii) Engineering Chemistry
- (iii) Mineralogy and Geology

PHYSICS.

(First Term—3½ hours weekly)

Electricity and Magnetism—Potential and capacity; condensers production and propagation of wireless waves; principles of wireless transmission and reception, receiving set Temperature coefficients, alloys and their uses, shunts, wheatstone method of measuring resistance, conditions for accuracy and sensitiveness, measurement of potential, current and resistance by potentiometer Back E M F, secondary cells, lead and alkaline Electric power and energy, relations between electrical, mechanical and heat units Application of heating effect to arc and incandescent lamps Magnetic lines of forces, electromagnetic relations C G S units Moving coil galvanometer, ammeter and voltmeter Magnetic circuit, magnetization of iron, measurement of permeability, hysteresis Electromagnetic induction coefficient of induction Lenz's and Fleming's laws

Heat—Scales of temperature, pyrometers, self recording devices, ready methods of finding expansion coefficients Precaution against expansion in engineering practice, applications of expansion Application of fusion Total heat of steam, moisture in steam and its determination Vapour pressure, hypsometer, flash point, storage of volatile liquids Heat insulating material and its testing Ventilation of buildings, draught in chimneys

(*Second Term—3 hours weekly*)

Heat (*continued*) —Radiation and laws of cooling Laws of perfect gas General thermodynamic principles and scale of temperature Calorific value of fuels and its determination

General —Commercial forms of weighing machines, commercial methods of measuring density, hydrometers Hydraulic press Fortin barometer, aneroid as altimeter Water and Air pumps Pressure gauges

Light —Photometry, parabolic and cylindrical mirrors; totally reflecting prisms, prismatic and cylindrical lenses Chromatic and spherical aberration, methods of minimising these Sextant telescope, microscope, eye pieces, prism binoculars and range finders

Sound.—Reflection and absorption of sound, reverberation, acoustic demands in a room, reverberation time, treatment of acoustically bad rooms

ENGINEERING CHEMISTRY.

(*First Term—3½ hours weekly*)

Colloids and their properties Phase rule and its application Water, its natural sources, suitability for various purposes pollution and its effects, purification Gypsum plasters Plain and hydraulic limes Cements, i.e. Normal and H.E.S. Portlands Aluminous cements, etc. their composition, preparation and properties, setting and hardening of mortar and cements Clay, effects of impurities, its various products i.e. porcelain, pottery and bricks, etc. Decay of timber, methods used in preventing decay

A study of the following metals, i.e. copper, aluminium, lead, zinc, chromium, manganese and their more important compounds Properties and composition of non ferrous alloys, i.e. white metals light metals, brass and bronze Iron and

steel, their manufacture and properties, effects of impurities, corrosion of iron and steel, steel alloys, cooling curves, metallography Preservation of structural materials

(Second Term—3½ hours weekly)

Petroleum, its origin, composition, properties and uses
 Bitumen and Asphalt Their composition, properties and uses
 Coal, its distillation products and their uses Road tars, their composition, properties and uses Tests of tars and asphalt
 Paints, Varnishes Preparation and use of common pigments

MINERALOGY AND GEOLOGY.

(Second Term—1 hour weekly)

Geology.—Elementary discussion of the geological agents, their influence in effecting geological changes and the records left by them Simple description of the principles of structural geology Sedimentary and igneous rocks Use of fossils

(Third Term—3 hours weekly)

Geology.—Elementary discussion of the general principles of historical geology, including a brief description of the geological record of the history of the earth with a short discussion of the chief characteristics of the following divisions

- (1) Archæan
- (2) Palæozoic
- (3) Mesozoic
- (4) Tertiary
- (5) Post Tertiary

A short description of the stratigraphical geology of India

Mineralogy.—Crystal form and symmetry, division into systems with their principal characteristics, classification based upon (a) chemical composition, (b) physical properties, i.e. specific gravity, hardness, cleavage, fracture and phenomena relating to light Simple description and identification of rock forming minerals, ores, vein tones, salts and gems

Group V.—MECHANICAL AND ELECTRICAL ENGINEERING.

- (i) Prime Movers
- (ii) Theory of Machines
- (iii) Machine Drawing
- (iv) Workshops
- (v) Electrical Technology

MECHANICAL ENGINEERING (PRIME MOVERS)

(First Term—2 hours weekly)

Elementary treatment of the production and properties of metals

Boilers —Shell Firetube and Watertube types Boiler fittings

Boiler accessories Steam pipe lines

Steam Engine —Simple slide valve engine, engine details High speed engines, Indicators and Indicator diagrams condensing Engines, Superheating, Steam Jacketting, Compounding

(Second Term—1 hour weekly)

Internal combustion Engines —Four stroke, Two stroke, Oil Engines, Petrol engines, Diesel engines

Steam Turbines —De Laval, Parsons Curtis

Machine Tools —Lathes Planning machines, Drilling machines, Milling Machines Universal Grinders Special Tools

(Third Term—2 hours weekly)

Thermodynamics—Ideal cycles, Entropy; Entropy-diagrams, Compressors

Steam Engine—Theory, Compounding, Combustion, Heat Transmission, Mollier diagrams, Superheating, Steam Jacketting Testing

(Fourth Term—2 hours weekly)

Internal combustion Engines—Principles of working; Effect of compression, Strength of mixture, Ignition, Fuels and their calorific value Testing of engines

(Fifth Term—2 hours weekly)

Steam Turbines—Flow of steam, Impact of steam; Classification of steam turbines, Determination of vane angles steam consumption, Effect of vacuum, superheat and initial pressure Balancing of end thrust, "Bleeding" Testing of turbines

Refrigerating machinery Principles of working, choice of working substance comparison of results of different machines

(1½ hours weekly)

Laboratory Practice,—

MECHANICAL ENGINEERING (THEORY OF MACHINES.)

(Second Term—1 hour weekly)

Kinematics of machines—Kinematic chains and their inversion, Analysis of motion, Angular, Reciprocating and straight line motions, Toothed gearing, Trains of wheels and epicyclic gears, Belts and belting Rope and chain drives, Cams

(Third Term—2 hours weekly)

Dynamics of machines —Friction and lubrication Static equilibrium of machines Turning moment diagrams Fly wheels Governors

(Fourth Term—2 hours weekly)

Balancing of machines Brakes and Dynamometers

(Fifth Term—1 hour weekly)

Hydraulic machines

(1½ hours weekly)

Laboratory Practice

MACHINE DRAWING

(Second Term—2 hours weekly)

Fastenings applied to structures Design of bearings Working drawings for a crane jib Hydraulic pipe lines pipe joints and specials

(Third Term—2½ hours weekly)

Complete working drawings for (a) Canal Sluice Gate (b) Travelling gantry Drawing from measurement of a complete 5 H P engine

MECHANICAL ENGINEERING

(First Term—4 hours weekly)

Workshops —Practical work in Carpenter's Blacksmith's and Moulding Shops

(Second Term—2 hours weekly)

Workshops —Practical work in machine and fitting shops

ELECTRICAL ENGINEERING.

(Third Term—2 hours weekly)

Electrical Technological.—*The magnetic circuits*—General consideration, Magnetic leakage Circuits in parallel, Cycles of Magnetism, B H Curves

Electromotive force—Production, Induced E M F , Statically and self induced E M F , Co efficiencies of self and mutual induction, Rise and decay of current

Construction of D C Machines—Windings, Commutation, E M F , equation Armature reaction, Interpoles, Compensating windings Characteristics of D C Generators

Direct Current Motors—Back E M F , speed, Characteristics, Series Shunt and Compound Motors Speed control, Series and parallel working

(Fourth Term—4 hours weekly)

Alternating Current—Principles, Effective value Induction, reactions and capacity, Polyphase currents, Alternators, Voltage regulation and parallel working, the induction motor, Converting machinery

Transformers—Single phase, Construction Theory, Use Cooling Auto transformers Parallel working Single phase commutator motors, Complex wave forms Phase advancing; Electric furnaces Electric welding

Rectifiers—Mercury and Valve

Power House equipment

• (Fifth Term—4½ hours weekly.)

Transmission and distribution of electrical energy —
Supply system, Distributors; Insulation resistance; Feeders;
Line constants, Lines, Insulators; Mechanical Characteristics;
Cables Voltage control, Circuit breakers, Feeder protection,
Travelling waves Protection against overvoltages.

Group VI.—PROJECTS.

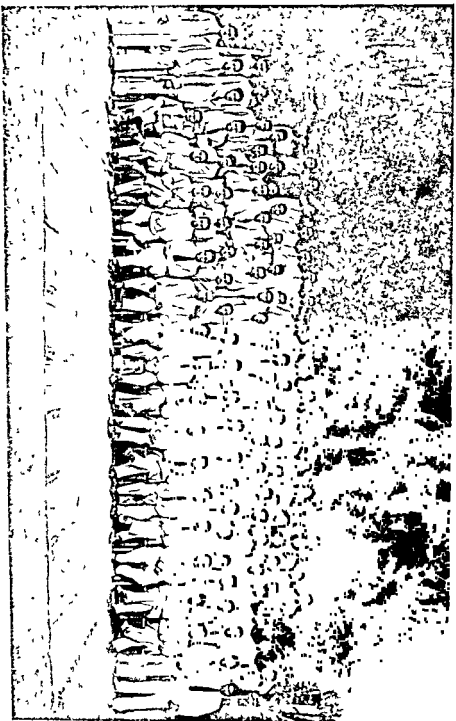
The projects will consist of the preparation of detailed designs and estimates for various engineering schemes. There will be one minor project, which will be examined by internal examiners and a major project which will be set and examined by an outside examiner. The maximum marks allotted to the minor project are 300 and to the major 700, making a total of 1,000 in this Group.

Group VII. PHYSIQUE AND GENERAL FITNESS.

General Fitness includes discipline punctuality general conduct and ability to control labour etc throughout the three years course Over 10 per cent of the total marks for the whole three years course are allotted to this group and the total marks therefore constitute a very fair and true record of the student's intellectual and physical fitness for the work of an Engineer

The sub heads and the marks allotted are —

	I year	II year	III year	Total
Military Proficiency —				
Physical Training	75			150
A F I and U T C			100	100
Games and Sports	70	75	175	320
Swimming			30	30
General Fitness			200	200
Total	145	100	500	800



OVERSEER CLASS

1941-42

COURSE OF STUDY AND SYLLABUS

OVERSEER CLASS

1941-42 and till further notice

The chief points kept in view in arranging this Course of Study are to ensure the necessity for steady work throughout the whole course and to co-ordinate the instruction given in each subject so as to lead up to a thorough test of the qualifications necessary for an overseer in the Public Works Department of as high a grade as a College training can produce, special attention being paid to the local conditions of India. This test is represented by the Project and the Final Examinations. Of the marks obtained in the first year 50 per cent are carried on to the second year so that continuous steady work is necessary for ultimate success.

Terms and Examinations

FIRST TERM—

College Attendances —From October 16 to a variable date in January.

Mid-Sessional Examinations —For both the 1st and 2nd year students start in the last week of January

SECOND TERM—

College Attendances —Start on the Monday following the Mid Sessional Examinations and continue till about the first Saturday in June

Revision in Quarters —During Entrance Examination:
Final Examinations —Start in the last week of April

The Course of Study extends over two years, and comprises the following subjects grouped under seven heads —

- | | |
|-------|--|
| Group | I—Civil Engineering including Process work |
| „ | II—Mathematics and Physical Science |
| „ | III—Surveying |
| „ | IV—Drawing |
| „ | V—Mechanical and Electrical Engineering |
| „ | VI—Project and design |
| „ | VII—General Fitness |

The marks required at the end of the second year for certificates are as follows

I—To obtain the Higher Certificate as Overseer the minimum pass marks of 45 per cent in each group and 60 per cent in the total must be obtained

II —To obtain an ordinary certificate (required for all overseers) the minimum pass marks of 33 per cent in each group and 45 per cent in the total must be obtained

For admission to the 2nd year a student has to obtain at least 33 per cent of the marks allotted to each group and 45 per cent of the grand total

A student who fails to attain the standard prescribed in any of the two years course will be given one more chance to repeat his studies at the College in the same class provided his stay at the College does not exceed three years. Such a student will not be eligible to compete for the United Provinces Government scholarships or academic prizes

Should the failure be however, due to prolonged absence through sickness or other circumstances beyond the student's control, such cases will be considered and decided upon their merits

The examinations and the marks assigned to them are shown on the following pages

GROUPING

FIRST YEAR

- 1 Civil Engineering
- 2 Mathematics and Physical Science
- 3 Surveying
- 4 Drawing
- 5 Mechanical Engineering

Students will be required to obtain 33 per cent in each group and 45 per cent in the aggregate

Fifty per cent of the aggregate marks in each group will be carried over to the second year

SECOND YEAR

- 1 Civil Engineering (Process work included)
- 2 Mathematics
- 3 Surveying
- 4 Drawing
- 5 Mechanical and Electrical Engineering
- 6 Project and design
- 7 General Fitness

Fitness for department	150
Physical training	100
Games and Sports	150

Students will obtain 33 per cent in each group and 45 per cent of the total for ordinary certificate

For Higher certificate 45 per cent in each group and 60 per cent in the total

LIST OF HOURS ALLOTTED TO EACH SUBJECT IN THE OVERSEER CLASS

First Year

<i>First term</i>	<i>Hours</i>	<i>Second term</i>	<i>Hours</i>
Building materials	3	Building construction	4
Roads	2	Earthwork	2
Building construction in cluding Carpentry	3	Field Engineering	2
Survey	4	Survey	4
Drawing	6	Drawing	6
Mechanical Engineering.	1	Mechanical Engineering	1
Workshop Practice (+ 2 alter nate per week)	4	Workshop Practice (+ 2 alternate periods)	4
Physics	3	Physics	2
Mathematics	8	Mathematics	8
	<hr/> 34 <hr/>		<hr/> 34 <hr/>

Second year

Bridges	2	Bridges and Building designs	3
Irrigation	1	Irrigation and Designs	5
Estimating	2	Sanitary Engineering and Water Supply	4
Water Supply	2	Reinforced Concrete	3
Building construction	1	Estimating	2
Survey	12	Railways	2
Drawing	4	Survey	2
Mechanical Engineering	1	Mechanical Engineering	1
Workshop Practice	2	Workshop	3
Electrical Engineering	1	Drawing	4
Mathematics	6	Mathematics	3
		Electrical Engineering	2
	<hr/> 34 <hr/>		<hr/> 34 <hr/>

*First year**First Half Session**Second Half Session*

THEORETICAL.

1	Building materials	100	1	Building construction I	50
2	Roads (2 hours paper)	50	2	Building construction II	100
3	Building construction including Carpentry	100	3	Earthwork (2 hours paper)	50
4	Survey (2 hours paper)	50	4	Survey	50
5	Trigonometry and Algebra	100	5	Drawing	50
6	Mensuration and Geometry	100	6	Mechanical Engineering	100
7	Mechanics	100	7	Physics	100
8	Mechanical Engineering	50	8	Elementary Mathematics	100
			9	Mechanics and Hydrostatics	100
			10	Applied Mechanics	100
		650			800

PRACTICAL

1	Levelling	100	1	Field Engineering and Compass	50
2	Civil Engineering Tutorial	50	2	Chain Survey	100
			3	Mathematics and Mechanics Tutorial	100
			4	Drawing Plates	200
			5	Workshops	100
			6	Civil Engineering Tutorial	50
		800			600
					1 400
				GRAND TOTAL	2,200

Second Year

THEORETICAL

First term

1	Bridges and Building construction	100
2	General Civil Engineering (Irrigation and Water Supply)	100
3	Estimating	100
4	Survey	100
5	Mechanical Engineering	50
6	Electrical Engineering (2 hours p p r)	50
7	Applied Mechanics	100
8	Hydraulics and Hydrostatics	100
		<hr/>
		700

Second term

1	Building Construction and Reinforced Concrete	100
2	Railways and Bridges	100
3	Public Health Engineering	100
4	Irrigation	100
5	Estimating	100
6	Survey	100
7	Drawing	50
8	Applied Mechanics	100
9	Mechanical Engineering	100
10	Electrical Engineering	100
		<hr/>
		950

PRACTICAL

1	Survey	200
2	Process work	50
		<hr/>
		250
		<hr/>
		950

1	Notes on works	50
2	Civil Engineering designs	150
3	Drawing plates	100
4	Applied Mechanics Tutorial	100
5	Works ops	50
6	Projects	300
7	General Fitness	400
		<hr/>
		1 150

Carried over from first year
 Second year marks

1 100
 3 050

 4 150

Group I.—CIVIL ENGINEERING.

BUILDING MATERIALS.

(1st year, 1st term, 3 hours a week)

Stone.—Classifications and varieties Characteristics Suitability for structures Quarrying, blasting and dressing

Bricks, tiles, fire-bricks and terra-cotta.—Composition of earth Moulding, drying and burning Characteristics and essential features

Lime and Cement.—Method employed in manufacture Essential features British standard specifications for cement

Timber.—Growth and structure Felling, converting and seasoning Decay and methods of preservation Common defects Characteristics of timber commonly used in India

Metals—Characteristics and properties of cast iron, wrought iron, steel, lead, copper, brass, zinc and tin

Miscellaneous.—Preparation of mortars Mixing, laying and curving concrete Plastering and pointing White and Colour-washing Other building materials such as asbestos and galvanized iron sheets, slates, paints, varnishes, distempers, Bitumen, Asphalt etc

ROADS.

(1st year 1st term 2 hours a week)

History and development Alignment Traffic census and cross-sections Gradients Curves Subsoils, under-drainage, soling and formation Earth, kankar and stone roads Temporary roads Hill roads Bridle paths Col-

lection and tests for materials Dust prevention Bitumen asphalt, tar and cement roads Pavements Wear and maintenance of roads Drainage crossings Arboriculture Preparation of road projects

BUILDING CONSTRUCTIONS

(1st year, 1st term, 3 hours a week)

Brickwork—Technical terms Bends Hollow walls Prevention of damp Arches Sills Lintels Bending of new and old work Plastering and pointing

Stone Masonry.—Different types of stone masonry—Ashlar, Block in course and rubble Dressing stones Joints Stone Lintels Arched lintels Marble linings Hoisting apparatus Corbel, jamb, sill and coping Raking back

Carpentry.—Various types of joints and fastenings Points observed in designing joints Wooden floors, partitions, roofs, stair cases, centres, staging, shoring and underpinning Joinery Special precautions necessary in selecting timber for joinery work Points observed in designing joints Different types of joints Doors and windows

(1st year, 2nd term, 4 hours a week)

Foundations.—Benching out Foundations in black cotton soil Fire places, flues, chimney stacks Precaution against settlement Columns, stanchions and girders with details of construction Various types of flat and pent roofs then details of construction and drainage Floors ceilings partitions, staircases Selection of site for a building, orientation of building, arrangement of rooms and accommodation allowed Ventilation in a building

(2nd year, 1st and 2nd terms, 2 hours a week)

Design of a steel structure (a roof truss or a water tank) and a small building with calculations for foundations, pillars, lintels, R S Joists, tie rods, rafters, purlins, battens, etc

EARTHWORK*(1st year 2nd term, 2 hours a week)*

Definition of technical terms Contracts Stability of different soils, angle of repose Properties of various kinds of earths, preservation of materials obtained in excavations Measurements Setting out Tools and implements used Cuttings, economical depth methods of raising earth from a deep cutting Embankments settlement allowance, methods of consolidation, slopes protection drainage Puddle—dry and wet Puddling Alignment of distributaries, borrow pits, spoil banks Profiles bed bars Temporary and permanent land Repairs Specifications Earthwork of hill roads

FIELD ENGINEERING*(1st year 2nd term 2 hours a week)*

Use of Spars—Various knots and lashings and the suitability of each to certain circumstances Coiling and landing of ropes Blocks and tackle Reeving of blocks Use of handspikes and rollers Hold fasts Guys Use and construction of derricks, shears gins and trestles in placing girders or columns in position in buildings, etc

Ground Tracing.—General principles Working plans for foundations on level ground and on slopes Trenches with vertical and with sloping sides Laying out buildings on the ground and similar practical instruction

IRRIGATION*(2nd year, 1st term, one hour a week)*

Definition of irrigation Classifications Natural, artificial, lift flow perennial, inundation Principal Indian crops, their crop seasons depths of water required for various crops

Well Irrigation—Sources of supply, subsoil water reservoirs, mota, drainage cones, classes of wells. Methods of raising water from wells. Duty of a well. Cavity and strainer type of tube wells. Various types of strainers. Critical velocity and depression head.

Channels—Canal. Distributary (major and minor). Duty. Water depth and running days. Evaporation absorption and percolation. Supplies utilized and lost. Safe and critical velocities. Kennedy's Channels design of channel from Barret's diagrams. Lacey's channel design of channels from Lacey's tables. Rise in subsoil water level. Water logging. Irrig. channels. Discharge of outlets.

Students will design a channel from the data supplied

(2nd year 2nd term 5 hours a week)

Works—Distributary heads. Regulators discharge sites. Falls. Siphon. Rapid. Bed Bars. Escapes. Drainage works. Silt tanks.

Head Works—Brief description of head works. main weir. afflux classes of weirs. causes of failure of weirs. description of foundation of weirs. Barrage. Drop and lift shutter. Under sluices. Object and description of groynes below weirs. Talus below weirs. Afflux embankments. Canal head. Regulators. Temporary bunds. Scouring sluices.

Torrent Works—Brief description of aqueduct. level crossing. superpassage. siphon. inlet. drainage. diversion.

Reservoir Irrigation—Capacity. duty. embankments. dams. spill ways. Drainage of dam. Saddle escapes. Breaching sections.

Training Works—Types and their object. Straightening channel. Temporary training works. Method of directing current.

The students will design a small fall and a siphon.

WATER SUPPLY*(2nd year 1st term 2 hours a week)**(2nd term, 2 hours a week)*

Sources of Supply—Rivers, lakes, springs and wells
 Types of wells shallow and deep wells Tube wells
 Diving tube wells in soft soil Varieties of tube wells
 Tests for yield of tube wells Purity at source Sampling of
 water for analysis

Pumping arrangements—Intakes and unfiltered water
 pumping statics Filtered water stations Tests Rising
 mains

Storage—Reservoirs and tanks

Purification—Mineral and organic impurities Hard
 and soft water Settling tanks Coagulation tanks and
 filter—slow sand and mechanical Chlorination and
 chloramination Clear water reservoirs

Distribution—Intermittent and continuous systems
 Service reservoirs Distribution pipes Pipe fittings
 House connections Alignment of mains Pipe joints
 Quantity supplied per capita Method of calculating sizes of
 pipes Loss of head in pipes Meters—Positive and
 Inferential Waste detection and prevention

SANITARY ENGINEERING*(2nd year 2nd term 2 hours a week)*

Systems of collection and removal of refuse—Conservancy
 and hand removal and sewerage systems Refuse destructors

Sewers and underground drains—Separate and combined
 systems Alignment of sewers and their sections Fall and
 velocity Flushing Catch pits gullies manholes
 Ventilating of sewers Clearing of obstructions Storm
 overflows Testing of sewers

Surface drains.—Alignment and their sections Provision for rain water Flushing and cleaning Junctions Road crossings

Sanitary Fittings.—Sanitary appliances Construction and testing of house drains Pail depots Public latrines and Urinals

Sewage Purification and disposal—Screening chamber Detritus tank Sedimentation tank Chemical precipitation tanks Biological treatment Land irrigation Contact beds Percolating filters Bio aeration treatment Simplex process Septic tank treatment Selection of site for out-fall

BRIDGES

(2nd year, 1st term, 2 hours a week)

(2nd term, 2 hours a week)

Selection of site Calculation of water way Discharge from catchment area and afflux Different types of temporary and permanent bridges Different types of steel bridges Plate girder bridge End bearings Foundation on dry ground, in soil charged with water and under water Piers Abutments and wing walls Depth and width of foundations Roadway River training Piles and pile driving Sheet piles Cofferdams Sinking of wells Design of a small culvert Design of a small plate girder .

RAILWAYS.

(2nd year, 2nd term, 2 hours a week)

History and development Alignment Grades Cross sections in embankment and cutting Curves The gauge problem Formation, Ballast Sleepers Rails Joints and fastenings Elementary treatment of points and Crossings Plate laying Superelevation Road Crossings

Tunnels Station requirements Wear of Rails Creep of
Rail Maintenance of permanent way

REINFORCED CONCRETE

(2nd year 2nd half session 3 hours a week)

Proportion of cement sand ballast and water Water
cement ratio Calculations with details of design of simple
slab Two way reinforced slab Simple beam Doubly
reinforced beam T Beam Short columns and R C
Pipes Reinforcement in fixed and continuous beams
Reinforced brickwork slabs and lintels Shuttering and
centering Design of a reinforced concrete T Beam floor
Design of a R C Culvert

PROCESS WORK

(1st year 2nd term)

Students will be shown the details of both the Ferrogallic
and Ferro prussiate processes and will be expected to make
prints from their own tracings on paper sensitised com-
mercially and on paper which they will themselves sensitise
Each student will submit three copies of prints on each kind
of paper in both processes

ESTIMATING

(2nd year 1st term 2 hours a week)

(2nd term 2 hours a week)

Taking off quantities required for engineering structures
abtracting and billing Estimating quantities of earthwork
in roads canals etc

Plinth area and cubical contents estimates Analysis of
rates for common items of construction General and detailed
specifications Preparation of contracts

Group II —PURE AND APPLIED MATHEMATICS AND PHYSICAL SCIENCE

ELEMENTARY MATHEMATICS

(1st year 1st term)

Geometry —Students will be expected to become familiar with the subject matter of Hall and Stevens School Geometry Parts I to V Students will also be expected to solve simple riders and to apply the propositions practically in the solution of easy graphical problems requiring geometrical drawing

Mensuration —Surface and volumes of cones frusta of cones spheres zones of spheres pyramids prisms cylinders and wedges

Trigonometry —Angles and their measurements Trigonometrical ratios The relation between the ratios of complementary and supplementary angles and of multiple and sub multiple angles

(1st year 2nd term)

Trigonometry —Simple identities and equations Solution of triangles including problems relating to heights and distances and those requiring the use of logarithms

ELEMENTARY MECHANICS

(1st year 1st term)

Velocity and acceleration Relative velocity Absolute unit of force Simple examples on rectilinear motion including the principles of energy and momentum Conception of force Elementary laws relating to concurrent forces Parallelogram and triangle of forces Limit

theorem Parallel forces Funicular polygons Moments
Friction Simple cases of equilibrium

(1st year 2nd term)

Centre of gravity Principle of work Simple machines,
namely lever screw pulleys wheel and differential pulleys
velocity ratio mechanical advantage and efficiency

APPLIED MECHANICS

(1st year 2nd term)

Determination of stresses in roof frames including the
effect of wind pressure Bending Moment and Shear Force
diagrams for cantilevers and simply supported beams Hooke's
Law stress and strain Resilience

(2nd year 1st term)

Stress analysis Principal stresses Conjugate stresses
Uniformly varying stress Application of Rankine—Gordon's
formula for struts Moment of resistance and strength of
beams Design of wooden and steel beams Stiffness of
beams and calculation from deflection formula for simple
cantilever and beams under (1) a distributed load and (2) a
single concentrated load

(2nd year 2nd term)

Stability of masonry structure Testing of retaining
walls and masonry arches

HYDROSTATICS

(1st year, 2nd term)

Fluid pressure at a point in a mass of liquid at rest and
on a plane surface partly or wholly immersed Intensity of
pressure and whole pressure Centre of pressure in simple
elementary cases

HYDRAULICS

(2nd year, 1st term)

Bernoulli's theorem Discharge through orifices and mouth pieces and over notches and weirs Laws of Fluid friction Discharge through pipes sewers channels

PHYSICAL SCIENCE

(1st year)

The subject is in elementary one and is taken up with special reference to the Engineering subjects. The elementary physical principles taught are illustrated by numerical examples in tutorial work and the measurement of principal quantities involved is carried out in the physical laboratory by students in a simple manner.

General Measurement —Fundamental units in C G S and F P S systems Mass density and specific gravity Buoyancy Determination of specific gravity by simple methods Atmospheric pressure and Boyle's Law Fortin and aneroid barometers siphon pressure gauges and water pump

Heat —Mercury thermometer and its graduation Expansion of solids liquids and gases with simple application Charles Law Units of heat specific heat its measurement by the method of mixtures measurement of specific heat of liquid by the method of cooling Laws of fusion and ebullition melting and boiling points latent heat evaporation Transfer of heat by conduction convection and radiation with simple applications of these methods Heat and work mechanical equivalent of heat Calorific value of coal Thompson's fuel calorimeter

Light —Rectilinear propagation of light and shadows Units of illumination and illuminatory power Photometers

Laws of reflection and refraction mirrors and lenses
 Elementary Electricity and Magnetism

Magnetism — Properties of magnets and magnetic needles magnetic poles and fields magnetic induction, law of inverse squares terrestrial magnetism with reference to dip intensity and variation

Electricity — Voltaic cells Daniell cells Leclanché cells Bunsen cell Dry cells Accumulators

Oersted's experiment Ampere's rule Magnetic field due to a current in a straight wire and in a circular wire Electric telegraph electric bell The principle of electromagnetic induction

Heating lighting and chemical effects

Ideas about unit current voltage power and energy, Ohm's law Simple grouping of cells and resistances

Ammeters voltmeters wattmeters tangent galvanometers

The course of experimental work in the Science Laboratory should take the student over a range of experiments covering as far as possible the syllabus in Science

Group III.—SURVEYING

(1st year, 1st term, 1 hour a week)

The Level—The use and adjustment of the level
Different types of levels and their constructional details
Different types of levelling staves and their markings Their relative merits
Precautions in using levels Level field books of different kinds Booking and reduction of levels
Comparative merits of reduction methods Definition of terms used in levelling Sources of error Curvature and refraction Longitudinal sections and their plotting
Allowable closing error

(1st year, 2nd term, 4 hours a week)

Chain Surveying.—Equipment Ranging and chaining lines Error in chaining Customary limits of error
Reconnaissance Selection of stations Keeping of the field book Obstacles which obstruct chaining but not ranging
Obstacles which obstruct ranging but not chaining Obstacles which obstruct ranging and chaining Plotting the survey

Compass Surveying—The Prismatic Compass, constructional details and its uses Bearings and angles Magnetic and true meridian Variations Designation of bearings
Comparative merits of whole circle and quadrantal reckoning Back bearings Application of compass surveying Local attraction Elimination of effects Sources of error Limits of precision Adjustment of closing error

The students will carry out and prepare one combined plate of chain and compass survey

(2nd year, 1st term, 12 hours a week)

The Theodolite—The use and adjustments of the theodolite Parts of horizontal measurement Parts for

vertical measurement Details of the Theodolite Measurement of angles Repeating angles Requirements of the Theodolite Conditions established by adjustment Errors in non adjustable parts Elimination of these errors

Traversing and its computations —Definition of a traverse Gale's traverse system Conditions fulfilled in a closed traverse Calculation and tabulation of co ordinates Closing error and its adjustment Advantage of plotting by co ordinates Omitted measurements and their calculations

Plane-tableing.—Equipment Advantages and disadvantages of plane tabling Maxims for plane tabling Order of working Methods of plane-tableing Fixing of position Traversing with the plane table Engineering contouring

The students will carry out a theodolite traverse and plane table triangulation survey and detail filling with plane-table together with contouring

(2nd year, 2nd term, 2 hours a week)

Curves and Alignments —Designation of curves Elements of curves Setting out by means of Theodolite and chain Setting out by means of chords and offsets Methods of calculation when curves start or end with sub chords Tabulation Problems in simple and compound curves Curve of deviation Transition curves Simple method for laying out a transition curve

Engineering Surveying.—Surveying requirements when making a project for a building, bridge, road canal distributary or railway

Group IV.—DRAWING.

(1st and 2nd years)

The course has been arranged to carry the student step by step in the technique of drawing as a preparation for a course in engineering design and survey mapping.

Drawings will be made of building construction details, culverts, railway and road plans, etc. In addition, drawings will be made from actual measurements taken of existing buildings. Projections and sections of solids.

Details of Drawing Plates

Serial no	Drawing Plates	No of hours allotted	Remarks
<i>Overseer Class first year</i>			
1	Sections of Mouldings	4	
2	Projections of Solids including their sections development of surfaces and isometric	12	
3	Doors and windows	8	
4	Wooden trusses	8	
5	Wooden stair case	12	To be inked
6	Railway culvert	8	Oblique section to be given
7	Drawing a small building from sketches	12	To be inked Oblique sections to be given
<i>Overseer Class second year</i>			
8	Drawing from measurements	20	To be inked
9	Designing a bungalow from specifications	20	
10	Steel Bridge from measurement	12	To be inked

NOTE—All drawing plates must be done in College during drawing periods and the dates of commencement and completion with the student's name and order of standing in the class are to be written on each plate.

Group V —MECHANICAL AND ELECTRICAL ENGINEERING

WORKSHOPS

(1st and 2nd years)

The object of the course is to familiarize students with the appearance structure and properties of materials commonly used in engineering and with the tools and processes by which they are shaped

Carpentry —A series of simple exercises will be provided including the preparation of various types of joints used in wood work

Foundry —The use and preparation of sand moulds and the explanation of Foundry methods

Students will be provided with simple patterns and cores from which they will prepare moulds and make castings in white metal, etc

Forge —Use of tools employed in forge work Exercises in drawing down upsetting welding etc

Fitting and Machine Shop —Use of hand tools in bench work Cutting tools and their action Characteristic features of simple machine tools

MECHANICAL ENGINEERING

(1st year)

Fastenings —Screws, Bolts, Nuts their production and uses Rivets and riveted joints, standard iron and steel sections

Boilers —Shell Water tube and Fire tube Description of the more common types, their erection and inspection

Boiler accessories description and uses Steam pipe lines
Arrangement and Lagging

Steam Engines —Description of the simplest types
including portable engine Engine foundations Erection

(2nd year)

Internal Combustion Engines —Description of oil petrol
and gas engines Foundations Location of starting and
running faults

Hydraulic Machinery —Laying and anchoring of pipe
lines Description of turbines Description of common
types of reciprocating and centrifugal pumps

Power Transmission —Elementary treatment of power
transmission by means of belts, gearing, ropes, chain and
friction drives

Lectures will be illustrated by models, wall diagrams of
modern machinery and conducted inspections of examples of
the above machinery in the College workshops and
laboratories

ELECTRICAL ENGINEERING

(2nd year 1st term, 1 hour a week)

(2nd term 2 hours a week)

House Wiring —Principles laid down by Government
Specifications for internal wiring

D C Power Plants —Lay out of simple D C distribu-
tion systems Description and working of simple switch
boards Protection devices and knowledge of normal faults
in a small power station

A C Power Plants —Lay out of simple A C generating
and distribution systems Description of alternators induc

tion motors and transformers. Comparison of A C and D C distribution system

The lightning conductor, parts used in and general rules for erection function of the lightning conductor Earth resistance of the conductor and method of measuring it Other tests to see that the conductor is in good condition

The course will not include the theory or manufacture of electrical machinery but laboratory demonstrations will be given of every principle dealt with in the course

Group VI.—PROJECT AND CIVIL ENGINEERING DESIGN.

The student will be required to design a number of simple structures under professional instruction and guidance.

The course will include the design of small buildings, culverts, simple design of beams, columns and slabs in reinforced concrete. Steel trusses, steel stanchions and small Falls for minors and distributaries.

Special stress will be laid on the design of constructional details.

The actual Project will consist of the preparation of a detailed design for an engineering scheme complete with report specifications and estimate. Each student will do his work independently.

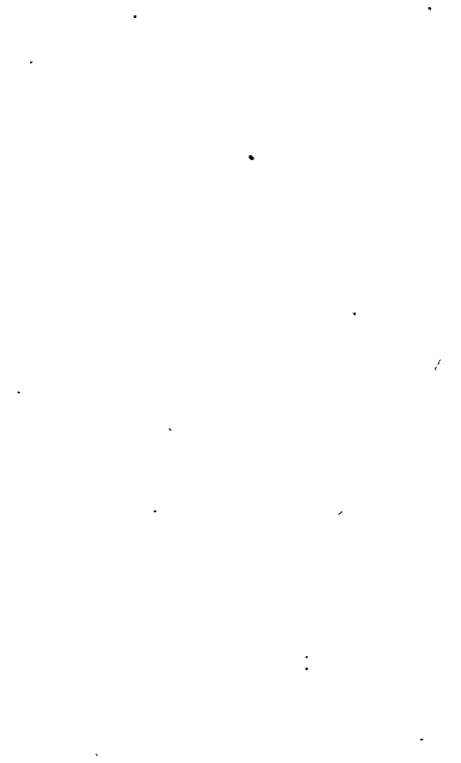
Group VII —PHYSIQUE AND GENERAL FITNESS.*(1st and 2nd years)*

Physical Drill —Proficiency in games and athletic sports
Physical and moral fitness for work in the engineering profession

The sub heads and marks allotted to Group VII Physique and General Fitness are —

Physical Drill	100
Athletics—Proficiency in games and sports	150*
General Fitness—Physical and moral fitness for work in the engineering profession	150
	<hr/>
Total	400
	<hr/>

*Athletics will be marked for Football Hockey Tennis and Athletic Sports and such marks will be awarded by the Headmaster in consultation with the Principal Any three will carry the 150 marks



COURSE OF STUDY AND SYLLABUS

DRAFTSMAN CLASS

Building Construction

(1ST YEAR, 1ST TERM)

Building Materials—Brick stone timber and metal—various kinds and their qualities

Brick-work—Technical terms English and Double Flemish bonds arches, sills, lintels bonding of new and old work, plastering and pointing

Stone Masonry—Different types of stone masonry—Ashlar, Block in course and rubble, technical terms, Corbel, jamb, sill, coping and lintel

(1ST YEAR, 2ND TERM)

Carpentry and Joinery—Various types of joints, a king post truss, queen post truss, various types of doors, windows, clerestory windows and their joints

Reinforced Concrete—Materials used and their qualities, function of each of the constituents, method of construction including details of false work

(2ND YEAR, 1ST TERM)

Details of a fireplace, chimney stack and flue Simple flat and pent roofs, floors and staircases

(2ND YEAR, 2ND TERM)

Working out sizes of scantling for roofs, floor joists, beams (wooden, steel and concrete) Calculations for the design of foundations, footings, lintels, arches and columns

(3RD YEAR, 2ND TERM)

Calculation of simple Reinforced Concrete Structures — beams, slabs, and short columns

Elementary Mathematics

(1ST YEAR, 1ST TERM)

Algebra—Factor, square roots, simple equations and simple quadratic equations

Mensuration—Areas of rectangles, triangles, parallelograms and quadrilaterals

(1ST YEAR, 2ND TERM)

Mensuration—Area of regular polygons, circles and their segments, volumes of cubes, prisms, cones, pyramids and cylinders

(2ND YEAR, 1ST TERM)

Elementary Trigonometry—Sines, cosines, tangents, cotangents and their use and logarithms

Elementary Applied Mechanics—Conception of Force, stress and strain Various types of stresses Moments, bending and resisting Bearing force and their application to simple beams

Estimating

(2ND YEAR, 2ND TERM)

Estimating of the following

- (1) A small building with pent roof
- (2) A small building with flat roof.
- (3) A small culvert.

(3RD YEAR)

1st Term and 2nd Term—The same as in Overseer Class 2nd Year.

Ferrotypes

Tracing of five drawing plates on linen Taking out blue prints

(1ST YEAR)

Drawing Plates

(1) Block printing of modern style and ornamental practice of freehand printing

(2) Italic printing—slanting and upright

(3) Scales—principles of scales and scaling

(4) Simple Geometrical figures Construction of arches

(5) Orthographic projections Projections of solids

(6) Flat tinting

(7) Simple building with oblique sections

(8) One small culvert with oblique sections

(9) A simple building with flat roof and its constructional details

(10) Measured drawing of residential building with pitched roof showing oblique sections

(11) Details of doors and windows and other large scale details of one of the above buildings

Lecture work

Description and use of instruments and paper used in Engineering Drawing

Use of projective drawing in building drawing

(2ND YEAR)

Drawing Plates

(1) Parallel of the orders Their application

(2) Constructional details of one of the various types of domes

(3) Intersection of solids

- (4) Shades and shadows
- (5) A big residential building—double storeyed
- (6) A school building, a court house, a post office, a bank building or a small hospital
- (7) A water tower
- (8) Regulator and head of a small distributary
- (9) A canal fall
- (10) A canal syphon
- (11) Structural Steel Work Details
- (12) Plotting from field book of chain Survey
- (13) Plotting a longitudinal section

Lecture work

Five orders of classic architecture

Different types of pillars in Indian style of architecture

Different types of arches including those in Indian style

(3RD YEAR)

Drawing Plates

- (1) Sketching and rendering
- (2) Making perspective of a building
- (3) A Reinforced Concrete bridge
- (4) Measured drawing of a trussed girder bridge
- (5) Measured drawing of a large building including rendering and preparing show drawings

PRIZES

CIVIL ENGINEERING CLASS

THE COUNCIL OF INDIA PRIZE OF RS 1,000

To the most distinguished student who obtains the

• Honours Diploma in Civil Engineering

THE THOMASON PRIZE OF RS 250

To the most distinguished student who obtains the Honours Diploma in Civil Engineering but does not obtain the Council of India Prize

THE RAI BAHADUR KANHAIYA LAL GOLD MEDAL

To the most distinguished Indian student, who does not obtain the Thomason or Council of India prize

THE THOMASON GOLD MEDAL AND BOOKS WORTH RS 25

To the student who submits the best engineering projects of a certain minimum excellency

THE CAUTLEY GOLD MEDAL

To the student who is the best mathematician and who obtains the highest marks in the papers shown below, but not less than $\frac{2}{3}$ of the total marks i.e. 416

1st Term

Mathematics	50
Mechanics	50

2nd Term

Mathematics	..	..	..	75
Mechanics	..	..	..	100
Graphic Statics	..	..	..	50
Mechanics Tutorial	..	..	..	50
				<hr/>
				375
				<hr/>

3rd Term

			375	4	..	150
Mathematics	..	..	..		..	75
Mechanics	..	..	..		..	100

4th Term

Mathematics	..	..	..	..	100
Mechanics	..	..	..	..	100
Tutorial	..	..	..	..	100

Total marks .. 625

THE CALCOTT REILLY MEMORIAL GOLD MEDAL .

To the student who obtains the highest marks in Applied Mechanics (Strength of Materials, and Theory and Design of Structures).

The papers concerned are detailed below :

1st Term

Strength of Materials	50
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2nd Term

Strength of Materials	100
				<hr/>
				150
				<hr/>

3rd Term

	150 \times 4	..	60
Strength of Materials and Theory of Structures		..	100

4th Term

Theory of Structures	100
Design of Structures	100
	<hr/> 360 <hr/>

5th Term

	360 × 7	252
Theory and Design of Structures	1st paper	100
Ditto	2nd paper	100
Total marks		<hr/> 452 <hr/>

THE GENERAL MACLAGAN PRIZE, BOOKS TO THE VALUE OF
Rs 34

To the student who obtains the highest number of marks in experimental science Highest marks in Electrical Engineering final year result plus highest marks in Physics 1st year results

THE SUSHILA AND J MITRA MEMORIAL SILVER MEDAL

To the Indian student, who obtains the highest number of marks in chemistry in 2nd year results If there is a tie 1st year results will decide

THE PURANMAL SILVER MEDAL FOR PUBLIC HEALTH
ENGINEERING

The Puran Mal Silver Medal for Public Health Engineering awarded to the Civil Engineer class, 3rd year, student who obtains the highest marks in the final external examination paper on Water Supply and Sanitary Engineering

SILVER MEDALS

for

SURVEYING HIGHEST MARKS IN THREE YEARS	DRAWING HIGHEST MARKS IN FIRST YEAR
	MECHANICAL ENGINEERING HIGHEST MARKS IN THREE YEARS

CIVIL ENGINEERING (THEORY)

To the student who obtains the highest marks in Civil Engineering (Theory)

1st Term		
Building Construction	50	}
2nd Term		
Building Construction	100	
Communications	100	
	250	
3rd Term		
250 × 4	100	}
Hydraulics	100	
Communications	100	
4th Term		
Irrigation	100	Subjects of Surveying, Drawing and Public Health Engineering have been omitted as they have a separate medal for each of them.
Hydraulics	100	
Reinforced Concrete	100	
	600	
5th Term		
600 × 7	400	}
Irrigation	100	
Reinforced Concrete	100	
Total marks	600	

LABORATORY WORK

To the student, who obtains the highest number of marks in practical and class work in Physics and Chemistry

OVERSEER CLASS

THE GENERAL MERIT PRIZE OF A SILVER MEDAL AND Rs 100

To the most distinguished student, who obtains the highest number of marks

THE KEAY MEMORIAL SILVER MEDAL AND Rs 18 (APPROX :

To the student who obtains the highest number of marks in Estimating

THE DURG A DAS DUTTA MEMORIAL SILVER MEDAL

To the most distinguished Indian student, who obtains the Higher Certificate and who obtains the highest number of marks

THE RAI BAHADUR KANHAIYA LAL SILVER MEDAL

To the most distinguished Indian student who obtains the highest number of marks

THE RAI BAHADUR KANHAIYA LAL SILVER MEDAL

To the Indian student who obtains the second highest number of marks

THE FAIRLEY MEMORIAL SILVER MEDAL

To the student who obtains the highest number of marks in Applied Mechanics

THE SULLIVAN MEMORIAL SILVER MEDAL

To the student, who obtains the highest number of marks in Mechanics

LALA PURAN MAL MEDAL FOR PUBLIC HEALTH ENGINEERING

The Puran Mal Silver Medal for Public Health Engineering awarded to the Overseer class, 2nd year student, who obtains the highest marks in the final external examination paper on water supply and sanitary engineering

THE PROJECT PRIZE OF A SILVER MEDAL.

To the student, who submits the best engineering project.

SILVER MEDALS

for

MATHEMATICS.

DESCRIPTIVE ENGINEERING

SURVEYING.

DRAWING.

WORKSHOP PRACTICE.

To those students, who obtain the highest number of marks in these subjects

DRAFTSMAN CLASS

THE GENERAL MERIT PRIZE OF A SILVER MEDAL AND Rs 30

To the most distinguished student, who passes out head of the class

A SILVER MEDAL AND Rs.20.

To the student, who passes out second in the class

N B—No prize will be awarded when the competition for it is insufficient for any other adequate reasons

GENERAL.

In addition to the numerous academic prizes there are many challenge cups and trophies for various events. These are mentioned below.—

(1) *The Harcourt Butler Cup*—

The cup is awarded under two sub heads “Work” and “Play”.

“Play” shall be deemed to be that portion of the course (Civil Engineer Class) called “Physique and General Fitness” group as follows.

A. F. I and U. T. C.

250 marks.

Athletics—Proficiency in Games and Sports

350 marks

General Fitness—Physical and Moral Fitness

for work in the Engineering Profession 200 marks

Total—For Play Group 800 marks

Total—For Studies or Work for
the three years 542½ marks

This total is reduced to a maximum of 800 marks by the multiplier $800/542\frac{1}{2}$ (or 0.14746)

Harcourt Butler Cup is awarded to the student who obtains the highest marks out of a total of 1600 marks consisting of 800 marks for play and 800 marks (reduced from a total of 542½ as above) for work

In case of a tie the student who obtains higher marks in the group Work (i.e. studies)

(ii) The Sanders Challenge Cup is to be awarded annually as a Challenge cup to the College student of whatever Class who is adjudged the best in all Games and Athletic Sport combined (excluding Rowing). It is to be awarded on the result of the College Championship events in Games and Athletic Sports and on skill and performance in team games such as Cricket etc.

2 The cup is awarded on marks on a basis of 50 per cent each for Games and Athletic Sports by a Committee composed of

(i) President of Recreation

(ii) President Athletic Sports Committee

(iii) Officer in charge of each Game

3 For the award of marks the two groups are divided into 4 sub groups each. Each sub group carries a maximum of 10 marks. These sub groups are

(a) Games—

(i) Tennis

(ii) Hockey

(iii) Football

(iv) Cricket

(b) Athletic Sports

(v) Throwing the Cricket ball and putting the shot

(vi) High Jump, Long Jump, Hurdles

(vii) 100, 220, 440 Yards Races

(viii) 880 Yards Race, 1 mile and Cross Country Races

(a) Games—In tennis, marks will be allotted as follows.

Finals or Olympic	10 marks
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Semi Finals	8 marks
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Quarter Finals	6 marks
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These positions refer to the results of the annual tournaments for that year. In the event of a competitor coming amongst first eight in singles and doubles, the mean result will count. In Cricket, Football and Hockey, any student who represents the College in Olympic will be awarded 10 marks. Otherwise 8 or 6 marks will be allotted by the Officer in-charge of the game at his discretion.

(b) Athletic Sports—The award of marks will be decided by the Championship placing as follows

First and Second positions	10 marks
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Third and Fourth positions	8 marks
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* Fifth and Sixth positions	6 marks
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The mean of marks obtained by a student in each of the events of the sub groups 5, 6, 7, 8 will then be the marks obtained by the student concerned in that sub group.

4 Marks are awarded out of a maximum of 100 marks, the balance of 20 being allotted to a special sub group 9. The method of award of these 20 marks is as follows

If a student obtains marks in X of the sub-groups 1, 2, 3, 4 and Y of the sub groups 5, 6, 7, 8, then

in the sub group 9 he will be awarded 5X or 5Y marks whichever is less *except* that, in case he obtains marks in seven out of the first eight sub-heads, he will be awarded 17 marks

Examples—A student in sub group 9 obtains—

- 0 marks if he gains marks in 1, 2, 3, 4 and none in 5, 6, 7, 8
- 5 marks if he gains marks in 1, 2, 3 and also in 5
- 10 marks if he gains marks in 1, 2 and also in 6, 7, 8
- 15 marks if he gains marks in 2, 3, 4 and also in 6, 7, 8
- 17 marks if he gains marks in 1, 2, 3, 4 and also in 5, 6, 7
- 20 marks if he gains marks in 1, 2, 3, 4 and also in 5, 6, 7, 8

5 The total of marks obtained in the nine sub groups will then decide the winner of Sandes Challenge Cup

- (iii) The Leon Challenge Trophy awarded to the student, irrespective of class who obtains the highest number of marks in the Annual Sports
- (iv) The Runner up Challenge Cup awarded to the student irrespective of class, who obtains the second highest number of marks in the Annual Sports
- (v) The Bradshaw Smith Challenge Cup awarded to the student, irrespective of class, who wins the Cross Country Race
- (vi) The Cross Country Race Challenge Cup awarded to the student, irrespective of class, who finishes second in the Cross Country Race
- (vii) The Verrières Challenge Cup awarded to the winning Relay Race Team, irrespective of class, at the Annual Sports
- (viii) The McLaren Challenge Cup awarded to the winning Tug-of War Team, irrespective of class, at the Annual Sports

- (ix) The Barnett Challenge Cup awarded to the Overseer Class student who obtains the highest number of marks in the Annual Sports not being a winner of either the Lion Trophy or Runner up Challenge Cup
- (x) The Single Sculls Challenge Cup awarded to the winner of this race in the Annual Regatta irrespective of class
- (xi) The Officers Challenge Cup Prince of Wales Own Sappers and Miners awarded to the winners of the Open Double Sculls in the Annual Regatta irrespective of class
- (xii) The Boating Challenge Cup awarded to the best oar of the 3rd year Civil Engineering Class or 2nd year overseer class
- (xiii) The Beer Challenge Cup awarded to the winners of the Pair Oars Race irrespective of class
- (xiv) The Challenge Fours Cup awarded to the winners of the Fours race in the Annual Regatta irrespective of class
- (xv) The Tennis Singles Challenge Cup awarded to the winner of the annual open Tennis Tournament irrespective of class
- (xvi) The Tennis Doubles Challenge Cup awarded to the winners of the annual open Tennis Tournament irrespective of class
- (xvii) The Puri Cup awarded to the winner of the annual open Squash Racquets Singles Tournament Civil Engineer Class only
- (xviii) The Squash Racquets Singles Runner up Cup awarded to the runner up of the annual open

Squash Racquets Tournament, Civil Engineer Class only

- (xix) The Mechanical and Electrical Engineer Class Challenge Cup, awarded to the student, irrespective of class, who obtains the highest aggregate in the annual Olympic contest with the Officers and British Non commissioned Officers of the King George's Own Sappers and Miners
- (xx) The Vizianagram Cup, awarded annually to the best Indian athlete of the 3rd year Civil Engineer Class
- (xxi) The Shooting Challenge Cup, awarded annually to the Section of the Platoon of the University Training Corps which obtains the highest score.
- (xxii) The Stampe Challenge Cup for inter-class athletics Open to all classes.
- (xxiii) The Inter year class football and hockey challenge cup. Open to all classes.

LIST OF TEXT-BOOKS.

LIST OF TEXT-BOOKS FOR DIFFERENT CLASSES

Each student should own his own copy of each book marked with an asterisk and these are obtainable generally from the College Book Depot at 12½ per cent off published prices. Such books will not be obtainable on loan from the College Library. Books unmarked with an asterisk are recommended for reference and such books are obtainable on loan from the College Library.

Particulars

Cost

Rs a

CIVIL ENGINEER CLASS I YEAR

* Dynamics —London	5 8
* Statics —Pur B D	5 12
* Examples in Theory of Structures —London	3 6
* Theory of Structures —Morley	8 8
* Roorkee Treatise on Surveying —Part I	3 3
* Heat for Engineers —Darling	7 12
* Heat Engines —Low	10 0
* Theory of Machines —Mackay	13 12

Total

57 15

Rivington's Notes on Building Construction —Parts I and II

Mitchell's Building Construction —Advanced Course

Architectural Building Construction —Jaggard and Drury.

Volumes I II and III

M E S Handbook —Volume I Part I

* Chambers's Mathematical Tables

Dynamics —Ramsey Part I

Particulars

- "Hydrostatics"—Jeasop and Gaunt
 "Calculus"—Lamb
 "Elementary Calculus"—B. D. Puri
 "Modern Framed Structures"—Johnson, Bryan and Turner, Volumes I, II and III
 "Stresses in Framed Structures"—Hool and Kinno
 "Analysis of Engineering Structures"—Pippard and Baker.
 "Applied Elasticity"—Timoshenko and Lessells
 "Strength of Materials"—Case
 "Hydraulics"—F. C. Leis
 "Applied Hydraulics"—Addison
 "Surveying"—Norman Thomas
 "Chemistry of Materials"—Lighon
 "Metallography"—Desch
 "Metallurgy of Common Metals"—Austin
 "Cements, Limes and Plasters"—Eckel
 "Heat and Principles of Thermodynamics"—Diaper.
 "Steam and Steam Engine"—Ripper
 "Theory of Machines"—Toft and Kersey.
 "Technical Electricity"—Davidge and Hutchinson.

Cost
Rs. a.

CIVIL ENGINEER CLASS, II YEAR

"Structural Engineering"—Husband and Harby	..	10 12
"Roorkee Treatise on Bridges"	..	7 0
"Military Engineering (Volume V) Roads, 1935"	..	5 0
"Roorkee Treatise on Railways"	..	3 1
"Roorkee Treatise on Surveying," Part II	..	2 10
"Callendar's Steam Tables"	..	2 4
"Mollier's "Diagrams"	..	1 4
"Maccall's "Continuous Current"	..	9 8
"Maccall's "Alternating Current"	..	9 8
"Applied Thermodynamics"—Robinson	..	10 12
"Hydraulics" by Lewitt	..	8 10
"Indian Water Works Practice" by Banerjee	..	..

Total .. 72 5

- "Roorkee Treatise on Estimating"
 "War Office Manual of Field Engineering," Volume II

• Particulars

- "Engineering Design"—Fordham
 "Competitive Design of Steel Structures"—Russell and Dowell.
 "Structural Engineering"—Kirkham
 "Irrigation Pocket Book"—Buckle.
 "River Discharges"—Hoyl and Grover.
 "Waterworks Handbook"—Finn, Weston and Bogert
 "Rainfall Reservoirs and Water Supply"—Binnie.
 "Road Engineering"—Leeming
 "Differential Equations"—Miller
 "Differential Equations"—Murray.
 "Plane and Geodetic Surveying"—Clark, Volume II
 "Text book of Topographical Surveying"—Close
 "Elements of Curve Design"—Royal-Dawson.
 "Railway Surveying and Permanent Way Work"—Perrott and Badger
 "Petrology"—Hatch
 "Geology"—Giekie
 "Balancing of Engines"—Dalby
 "Design of Electrical Machinery"—Clayton
 "Electrical Engineering"—Thomalen
 "Permanent Way"—Cole
 "Stream Gauging"—Liddell.
 "Dissipation of Energy below Falls"—Inglis and Joglekar.
 "Hydraulic Structures"—Volumes I and II, Schokhisch.
 "Irrigation Canal Falls"—Montague
 "Fluming"—Montague

Cost

Rs a

CIVIL ENGINEER CLASS, III YEAR

* "Elements of Reinforced Concrete Design"—Adams	5 0
* "Concrete Plain and Reinforced" by Taylor Thompson, Volume I	27 0
* "Sewers" by Bevan and Rees	6 0
* "Sewage Purification and Disposal" by Kershaw	.. ..
Total	<u>38 0</u>

Particulars

- "Modern Sewage Treatment"—Francis.
- "War Department Manual on Drainage"
- "Steam Turbines"—Kearson.
- "Heat Engines"—Inchley
- "Alternating Current"—Kemp
- "Transmission of Alternating Current"—Rapson
- "Diagnosing of Troubles in Electrical Machinery"—Miles Walker.
- "Protection of Alternating Current Circuits"—Stubbings.
- "Reinforced Concrete Bridge Design"—Adams and Chetice.
- "Reinforced Concrete Bridges"—Scott.
- "British Standard Specifications" for Portland Cement.
- "The Transmission and Distribution of Electrical Energy"—H. Cotton.
- "Notes on flumed aqueducts"—Inglis.
- "Notes on Standing Wave Flumes and Flume Meter Falls"—Inglis.
- "Energy of Flow, Pressure and Momentum Diagrams"—Montague.
- "Design of Weirs on Permeable Foundations"—A. N. Khosla.
- "Design of Concrete Structures"—Urquhart and O'Rourke.
- "Surveying"—Norman Thomas.
- "Plane and Geodetic Surveying", Volumes I and II—Clark.
- "Thermo-dynamics for Engineers"—Ewing.
- "Steam Power"—Dalby.
- "Balancing of Engines"—Dalby

Particulars	Cost
	Rs a.
OVERSEER CLASS, I YEAR	
* "Roorkee Treatise on Earthwork"	1 12
* "Building Construction, Advanced Course"—Mitchell	7 14
* "Building Construction, Elementary Course"—Mitchell	4 14
* "Elementary Trigonometry"—Loney	3 1
* "Elementary Mensuration"—Perrepoint, Parts I and II	3 14
* "Elements of Statics and Dynamics"	6 8
* "Roorkee Treatise on Surveying", Part I	3 1
* "Heat Engines"—Low	10 0
* "Class Book of Physics"—Gregory and Hadley, Parts III, IV and V (Vol I), Parts VI, VII and VIII (Vol I) at Rs 2 each	4 0
* "Logarithmic Tables"—College Manual	1 8
Total	46 8

"Mechanics for Engineers"—Morley.

"M E S. Handbook"—Volume I, Part I.

OVERSEER CLASS, II YEAR

* "Building Mechanics"—Sheppard	5 8
* "Military Engineering (Vol V) Roads, 1935" ..	5 0
* "Roorkee Treatise on Railways"	5 1
* "Roorkee Treatise on Bridges"	7 0
* "Roorkee Treatise on Irrigation", Volume I ..	4 6
* "Sewers and Sewerage"—Whyatt	1 12
* "U. P. Irrigation Technical Paper no. 1 (Design of Channels)"—G Lacey	0 14
* "Roorkee Treatise on Estimating"	6 9
* "Elementary Hydraulics for Technical Students"—F. C Lea	4 14
* "Elements of Reinforced Concrete" by Adams ..	5 0
Total	46 0

Particulars

War Office Manual of Field Engineering, Volume II.

"Sewage Disposal"—Kershaw

"Strength and Elasticity of Structural Members"—R. J. Woods

"Structural Engineering"—Husband and Harby

"Reinforced Concrete Simply Explained"—Oscar Faber

"Examples of Reinforced Concrete"—Oscar Faber.

DUPLICATE CERTIFICATES

For duplicate diplomas and certificates the following charges are levied

	Rs
Diploma	24
As Assistant Engineer	24
As Upper Subordinate	16
As Overseer	16
As Lower Subordinate	8
As Draughtsman	8

SUBSIDIARY DEPARTMENTS OF THE COLLEGE

LIBRARY

The College Library contains about 27,000 volumes classified as under *

PART I

Scientific and Professional Works

Class AA	Pure Mathematics	Class F	Mental, Moral and
„ AB	Applied Mathematics		Social Science
„ B	Physics	„ G	Civil Engineering
„ C	Chemistry	„ H	Surveying and
„ D	Geology, Mineralogy and Palaeontology		Drawing
		„ J	Electrical Engineering
E	Other Branches of Natural Science	K	Mechanical Engineering
		„ L	Other Professional Works

PART II

General Literature, Art, Industries, etc

Class M	Recreations and Amusements	Class S	Commerce and Economics
N	Geography, Ethnography and Travel	„ T	Agriculture, Forestry and Gardening
O	History	„ U	General Scientific and Professional Journals and Transactions
„ P	Literature and Philology	„ V	Indian Government Publications
Q	Arts and Trades		
„ R	Fine Arts		

*The above is the existing classification but a new classification according to the Dewey System is now in progress

The Library is free to all gazetted Government officers, and other outstation residents in special cases can obtain books on application

There is a printed Catalogue, and a Supplement is issued every year, which can be obtained on application to the College office

THE COLLEGE REGISTER OF EMPLOYMENT

The College registers the names of, and supplies employers with the names of approved engineers, upper subordinates overseers, lower subordinates and draftsmen

THE FOLLOWING INSTITUTIONS ARE ALSO MAINTAINED IN CONNEXION WITH THE COLLEGE

1 CIVIL ENGINEERING MODEL ROOMS	7 DEHRA DUN (CONTINGENT, AUXILIARY FORCE, INDIA, ROORKEE DETACHMENT
2 METEOROLOGICAL OFFICE	
3 WATER WORKS	8 No 15 PLATOON, 3RD UNITED PROVINCES BATTALION, UNIVERSITY TRAINING CORPS, INDIAN TERRITORIAL FORCE
4 COLLEGE DAIRY	
5 COLLEGE DISPENSARY	
6 SPORTS AND ATHLETIC CLUBS	

List of Donations to the Thomason College for prizes and other Miscellaneous purposes

Year	Names	Rs
1854	Subscribers to the Thomason Testimonial Fund	2 500
"	Sir Probyn T. Cantley, K. C. B.	2,000
1856	Lieut. T. Wright, 46th N. I.	100
"	" W. Marshall 48th N. I.	100
"	" T. E. Dickens Artillery	100
"	" G. Ballie, Artillery	100
"	Ensign H. E. W. 26th N. I.	100
"	Lieut. E. L. Earle, Artillery	100
"	" E. Smalley, 36th N. I.	100
"	" C. B. Wash, 14th Light Dragoons	100
"	" A. B. Melville, 67th N. I.	100
1860	" E. C. Garstin 20th N. I.	100
"	" E. S. Wood 93rd Highlanders	100
1862	Capt. W. H. Mackesy, 79th Highlanders	100
1864	Lieut. E. C. Shepherd, General List, Infantry	100
1865	" E. W. Samuels " "	100
"	" B. J. Parsons 27th N. I.	100
"	H. H. the Maharaja of Kashmere	500
"	Lieut. J. E. Sandaman General List, Infantry	100
"	Capt. F. G. S. Parker, 54th Regiment	100
"	" F. D. M. Brown, V. C., 101st Regiment	100
"	Lieut. L. Wavell, 22nd N. I.	100
"	Peter Keay, Esq.	120
1867	Lieut. W. S. Lallington, M. A., 7th Hussars	200
1868	" E. C. Elliston, 58th Regiment	100
1869	Colonel R. MacLagan, M. A. (for "MacLagan" Prize Endowment)	1,000
"	Isser Chandar Surkar	50
"	Sergt. W. S. Melair, M. A.	50
"	G. W. Dowsworth, Esq.	100
"	J. Mole, Esq.	50
"	J. Lyons, Esq.	50
"	S. Fraser, Esq.	20
"	Sergt. P. Kelly	50
"	Lieut. G. Nolan	100
"	J. Ferris, Esq.	20
"	Lala Bhari Lal	100
"	C. Chisholm, Esq.	30
"	H. Mitchell, Esq.	20

Year	Names					Rs.
1869	T. Gray, Esq. ..	..	..	..	..	25
"	J. Southon, Esq.	..	..	..	..	25
"	Sergt. A. Forsyth	..	..	..	..	30
"	J. H. Chapman, Esq.	..	..	..	..	25
"	G. McArthur, Esq.	..	..	..	..	50
"	J. Gillan, Esq.	..	..	..	..	25
"	W. Phillips, Esq.	..	..	..	..	300
"	C. Collogher, Esq.	..	..	..	..	250
1870	Rai Bahadur Kanhya Lal (for "Kanhya Lal" Prize Endowment)					100
"	Capt. C. E. D. Branson, 37th P. N. I.			..	..	100
"	Dr. Murray Thomason, M.D., F.R.S.E.			..	..	200
1872	Lieut. G. W. Martin, 88th Regiment			..	..	100
1873	W. Willcocks, Esq. (to Engineer Students Mess)			..	..	100
"	E. Hodges, Esq.	..	..	..	..	100
"	H. H. the Maharaja of Vizianagram	..	..	..	..	1,000
1874	R. B. Smart, Esq. (Rev. Sur.) (for Surveying Prize)			..	..	100
"	R. W. L. Hawkins, Esq. (to Engineer Students Mess)			..	..	100
"	Lieut. W. T. McLaughlin, 48th Regiment			..	..	100
"	Reginald H. McLaughlin, Esq.	..	..	..	..	50
1875	V. B. Paterson, Esq.	} (to Engineer Students Mess).				
"	S. Jarman, Esq.					
"	F. J. McLaughlin, Esq.					190
"	R. L. Campbell, Esq.					
"	R. W. L. Toozs, Esq.	..	..	..	..	100
"	A. E. Adie, Esq.	..	..	..	..	4"
"	Lieut. S. M. Maycock, R.E. (for Mechanism Prize)			..	..	50
"	R. B. Smart, Esq. (Rev. Sur.) (for Surveying Prize)			..	..	100
"	W. A. Francken, Esq., Assistant Superintendent, Canal Foundry (to College Recreation Fund)			..	..	50
1876	Lieut. S. M. Maycock, R.E. (for Mechanism Prize)			..	..	50
"	Capt. Allan Cunningham, R.E. (for Applied Mathematics Prize)			..	..	50
"	Subscribers to Keay Memorial (balance of subscriptions after erecting Tablet)			..	..	1,000
1877	H. H. the Maharaja of Jummoo and Kashmere			..	..	1,000
"	Raja of Rutlam	..	..	..	..	100
"	Captain Allan Cunningham, R.E. (for Applied Mathematics Prize)			..	..	50
"	Rai Bahadur Kanhya Lal (to change the Prize Endowment of 1870 to the "Rai Bahadur Kanhya Lal Gold Medal,"					1,500
"	"					50
"	"					750
"	"					50
"	"					100

Year	Names	Rs.
1878	Colonel J. G. Medley, R.E. (for Civil Engineering Prize)	50
"	Lieut. S. M. Maycock (for Mechanism Prize)	50
"	Major A. M. Brandreth, R.E. (for Note Books and English Prizes)	50
"	Anonymous from Jhansi	100
1880	Colonel J. G. Medley, R.E. (for Civil Engineering Prize) .	50
"	Lieut. S. M. Maycock R.E. (for Surveying Prize) .	50
"	Major A. M. Brandreth, R.E. (for Note Books, English and Romanised Urdu Prizes) .	70
"	Babu Krishna Chandra Banerji (for Mathematics) .	50
1881	Colonel J. G. Medley, R.E. (for Civil Engineering Prize) .	50
"	Lieut. S. M. Maycock, R.E. (for Surveying Prize) .	50
"	Major A. M. Brandreth, R.E. (for Note Books, English and Romanised Urdu Prizes) .	70
"	W. P. Housden, Esq. (to Engineer Students Mess) .	100
1882	Colonel J. G. Medley, R.E. (for Civil Engineering Prize) .	50
"	Lieut.-Col. A. M. Brandreth R.E. (for Note Books, English and Romanised Urdu Prizes) .	70
"	Lieut. J. H. C. Harrison R.E. (to Engineer Students Mess) ..	100
"	" J. H. C. Harrison, R.E. (for Surveying Prize) ..	50
1883	Colonel J. G. Medley R.E. (for Civil Engineering Prize) ..	50
"	Lieut.-Col. A. M. Brandreth R.E. (for Note Books, English and Romanised Urdu Prizes)	70
"	Lieut. J. H. C. Harrison, R.E. (for Surveying Prize) ..	50
1884	Lieut. Col. A. M. Brandreth, R.E. (for Civil Engineering, Note Books and English Prizes) ..	100
1885	Lieut. Col. A. M. Brandreth, R.E. (for Civil Engineering, Note Books and Estimating Prizes) .	100
"	Lala Bihari Lal (for Language Prize) ..	15
1886	Lieut. Col. A. M. Brandreth, R.E. (for Civil Engineering, Note Books and Estimating Prizes)	100
"	Lala Bihari Lal (for Language Prize) .	15
1887	Lieut.-Col. A. M. Brandreth, R.E. (for Civil Engineering, Note Books and Estimating Prizes)	150
"	Lala Bihari Lal (for Language Prize)	15
"	Rai Bahadur Kanhya Lal to found Silver Medals for Indians of Upper and Lower Subordinate Classes .	1,000
1888	Lieut. Col. A. M. Brandreth, R.E. (for Civil Engineering, Note Books and Estimating Prizes)	100
"	Lala Bihari Lal (for Language Prize)	15
"	Rai Bahadur Kanhya Lal	100
1889	Lieut. Col. A. M. Brandreth, R.E. (for Civil Engineering, Note Books and Estimating Prizes)	100
"	Lala Bihari Lal (for Language Prize)	15
1890	Lieut. Col. A. M. Brandreth, R.E. (for Civil Engineering, Note Books and Estimating Prizes)	100

LIST OF DONATIONS

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Year	Names	Rs.
1932	Babu Amar Nath Dutt, B.A., LL.B. (for best Indian student obtaining Higher Certificate in Overseer Class)	16/4
1933	G Lacey, Esq. (for the best performance in the Thomasonian Society)	25
..	Babu Amar Nath Dutt, B.A., LL.B. (for best Indian student obtaining Higher Certificate in Overseer Class)	16/4
1934	Ditto ditto	16/4
1935	Ditto ditto	16/4
1936	Ditto ditto	9/10
..	G Lacey, Esq. (for the most capable speaker in the Thomasonian Society)	25
1937	Babu Amar Nath Dutt, B.A., LL.B. (for best Indian student obtaining Higher Certificate in Overseer Class)	15
1938	Ditto ditto	13
..	G Lacey, Esq. (for the most capable speaker in the Thomasonian Society)	25
..	Lala Purn Mal, retired Assistant Engineer, Public Health Department for two silver medals in Public Health Engineering for Civil Engineering and Overseer Classes, respectively	500
..	Lala Purn Mal also paid for cost of dies of above silver medals	242
1939	Babu Amar Nath Dutt, B.A., LL.B. (for best Indian student obtaining Higher Certificate in Overseer Class)	10
..	G. Lacey, Esq. (for the most capable speaker in the Thomasonian Society)	25
1940	Babu Amar Nath Dutt, B.A., LL.B. (for best Indian student obtaining Higher Certificate in Overseer Class)	10
..	G. Lacey, Esq. (for the most capable speaker in the Thomasonian Society)	25
1941	Babu Amar Nath Dutt, B.A., LL.B. (for best Indian student obtaining Higher Certificate in Overseer Class)	10
..	G Lacey, Esq., B.Sc. (for the most capable speaker in the Thomasonian Society)	25
1942	Babu Amar Nath Dutt, B.A., LL.B. (for best Indian student obtaining Higher Certificate in Overseer Class)	12
..	G Lacey, Esq., B.Sc., C.L.E., I.E.S., (for the most capable speaker in the Thomasonian Society)	25

RULES OF THE ADVISORY COUNCIL, THOMAS- SON COLLEGE OF CIVIL ENGINEERING, ROORKEE.

Re constituted under G O No 556G/XV—555 1932, dated June 2, 1933, copy received with Director of Public Instruction, letter No G/1315, dated June 2 1933 Rules approved in Director of Public Instruction, U P letter No G/1675 dated July 26, 1933 and G O, U P Edn Dept no 168C/XV—555, dated December 15, 1933

1 The function of the Council will be to advise Government on questions of policy, organization, finance, staff buildings, equipment the formation or re constitution of classes, curricula, rules of admission and any other subject connected with the College on which Government may require its advice. As the Council will be closely associated with the College and will visit it periodically, it will also be in a position to take the initiative in suggesting improvements and reforms in respect of any of the above matters

2 The Council will consist of —

- (1) The Chief Engineer, Public Works Department,
Irrigation Branch
- (2) The Chief Engineer Public Works Department
Buildings and Roads Branch
-) The Director of Public Instruction, United Pro-
vinces
- (4) & (5) Two non official members, elected by the
Legislative Assembly United Provinces
- (6) A representative of the United Provinces branch of
the Institution of Engineers India

(7) A representative of University Education, nominated by the United Provinces Government

(8) A representative of the Institution of Civil Engineers London

(9) The Principal of the College Roorkee

3 The senior of the two Chief Engineers shall be the President of the Council

4 The Principal of the College will be *ex officio* Secretary of the Council and shall have a right to vote

5 The term of office of non official members of this Council shall be for a period of three years provided that a member shall cease to be a member of the Advisory Council when he ceases to be a member of the body which he represents, a new election shall be held by each new Legislative Assembly at its first session and at the same time, other bodies shall be required to make their nominations

6 The committee shall meet at least once a year at Roorkee on a date to be fixed by the Principal after informal consultation with the President The Council may also hold any other meetings whenever it appears desirable to do so, at any place in the United Provinces to be fixed by the President

7 Notice of the time and place of meeting will be issued to each member by the Secretary at least 6 weeks in advance

8 Four members of the Council, exclusive of the Principal who must always be present shall constitute a quorum

Note—Should the quorum fail and should the President consider the meeting as constituted specially competent to discuss the issue in point the proceedings shall go forward the opinion of the other members being subsequently obtained by circular

9 The Secretary of the Council may in urgent and other cases submit matters for the opinion of the Council by correspondence

10 The proceedings of the Council after approval, will be written in a consolidated form and a typed copy of the same will be circulated to all the members and one copy submitted to Government through the Director of Public Instruction for orders

11 The Council is authorized to call in experts for the consideration of any question on which experts' advice is required, and to recommend the appointment of Sub Committees to deal with particular questions or with special branches of the work of the College Before consulting any expert whom it is proposed to remunerate for his advice the Council should obtain the sanction of Government to the payment of such remuneration

12 The official members when attending meetings will draw travelling allowance under the rules The non-official members will each be paid the ordinary travelling and daily allowance admissible to an officer of the first class

13 It is expected of members that they will from time to time pay personal visits of inspection to the College and thus keep in touch with its circumstances its work and its needs and aspirations

RULES OF THE BOARD OF STUDIES, THOMAS- SON COLLEGE OF CIVIL ENGINEERING, ROORKEE.

Approved by the Government, vide letters of the Director of Public Instruction, nos G/2423, G/3358 and G/3828 dated October 23 1925 September, 1934 and November 14, 1938 respectively

1 The members of the Board will include the Principal, all Professors and Assistant Professors of the College. The Principal will be *ex officio* President. A Lecturer or Lecturers of the College may at the discretion of the President be co-opted for any particular meeting of the Board.

2 The meetings of the Board will be convened by order of the President.

3 The Secretary will be elected from among the members of the Board of Studies.

4 The Secretary will circulate, before each meeting, a copy of the agenda, together with all the necessary papers relating to subjects entered for discussion.

5 Any member, with the previous sanction of the President, may bring forward for discussion any subject of an academic nature pertaining to the College work.

6 The Board of Studies will be an Advisory Body, it will not exercise any control over discipline, but, in consultation with the President, will assist him in —

(a) The appointment of moderators for each external paper

(b) The scrutiny of all sessional and final pass lists of the Civil Engineer and Overseer classes, and the award of grace marks under the procedure

as laid down for their allotment by Government order

- (c) The allotment of marks for general fitness, total 200 to the students of the 3rd year civil engineer class just prior to their completing their course
- (d) The preparation or revision of all time tables, syllabuses and courses of study of all classes as the President may deem necessary

7 The President, at his discretion, may at any time consult the Board on any other subject affecting the College work

8 The minutes of each meeting will be recorded by the Secretary and read and confirmed at the following meeting

STANDING ORDERS

OF THE

Thomason College of Civil Engineering, Roorkee,

1942-43

and till further notice

General rules

Each student upon admission to the College must make himself familiar with the following orders, and in case of any breach of these orders the plea of ignorance will not be entertained

1 Students on arrival will report as follows —

All students of the Civil Engineer Class to the Personal Assistant to the Principal, other students, to the Superintendent of Overseer Class Hostels who will allot them quarters

2 Each student will be responsible for the state of the quarters allotted to him, and will be charged for the repair of any damage which they may sustain beyond fair and unavoidable wear and tear. Accidental injury or disrepair should be immediately brought to the notice of the Hostel Superintendent concerned with a view to its rectification. All students must vacate College quarters during the long vacation

3 No visitors, other than students of the class to which the occupier belongs, are to enter students' quarters without the sanction of the Personal Assistant to the Principal

4 Furniture, at a nominal rent, will, as far as possible, be provided for students of the Civil Engineer Class for use in the hostels, and damage to the same will be assessed by the

Personal Assistant to the Principal Such furniture is not to be removed from the rooms, or used for any other purpose without permission Special furniture will be provided for the various camps Students of classes, other than the Civil Engineer Class, will make their own arrangements for furniture

5 All students have to engage their own servants and immediately upon appointment have to report the names of same on the correct form—obtainable from the College office—to the Personal Assistant to the Principal The Personal Assistant maintains a black list of servants, and if any student has appointed a servant whose name is on the black list, the student will have to dismiss such servant at once and appoint another following the same procedure Without the Principal's sanction no unauthorized persons, servants or guests will be permitted to reside in the hostels or servants' quarters or to enter them after nightfall The wages of private servants must be paid by the 10th of each month following that for which they are due Students are required to take a receipt for every payment made by them to their servants, whether such payments relate to wages or other accounts

6 All information regarding text books, courses of study dates of examinations attendances etc will be found in the College Calendar and pamphlets of the courses of study and syllabi of the various classes

7 Students are reminded that this is a College for young men and not a school for boys Though all needful assistance will be given to those really anxious to work, it is entirely on their own exertions that their success must depend, and in cases of failure, they will only have themselves to blame They are, however, specially warned against idleness in their first year under the expectation that they can pick

up in the second or third. The course is so laid out, that continuous application is required the whole time. Students are reminded that if they fail to make sufficient progress in their studies, or fail to pay all College dues* on demand, they are liable to be suspended or removed from the College at any time.

The guardian of any student so suspended or removed will be held responsible for the payment of any debts whatsoever, which may have been contracted while the student was in the College. Although every precaution is taken to prevent students from running into debt, the College authorities are in no way to be considered responsible for such debt.

8. All students will attend the College regularly for studies at the hours laid down in the time tables, and for outdoor duties at the times prescribed by the Officer-in-charge of their class or their Professors, Lecturers or Instructors. *No student may be absent from his quarters in the College lines without leave after 9 p.m. during the first term of any session, and 10 p.m. during the second term of any session, or before sunrise.* The punishment for breaking this rule will be of the severest description. To enable the authorities to check this rule no doors should be locked at the times specified

* NOTE—The words "College Dues" include—

- (i) College fee.
- (ii) Rent and conservancy.
- (iii) Rent of College furniture
- (iv) Electric light charges.
- (v) Recreation fund subscription and cost of articles purchased from recreation stores
- (vi) All dues in connexion with Engineer Class Club
- (vii) All dues of College Dairy, College shoe maker, College shop keeper, College tailor, College sweet seller and College stores
- (viii) All dues in connexion with common Civil Engineer class Mess

above Students are permitted to sleep immediately outside, and in front of, their quarters during the hot weather.

9 All smoking, spitting, whistling or making any loud noise in the College classrooms, lecture theatres, laboratories or corridors, etc is strictly prohibited Students should be careful to do nothing which may interrupt, or distract others at work

10 No debts, other than College dues (see note under paragraph 7) are allowed to be contracted Students are strictly cautioned against all irregularities in money matters Flagrant cases which tend to bring discredit on the College are liable to result in severe penalties being imposed upon offending students

11 All dues from students, recoverable by the College whether payable to Government or to private funds, persons or bodies, must, for every month, be punctually discharged in full before the 21st of that month, failing which the students will be fined marks, suspended or removed at the discretion of the Principal

12 The Principal and the Officers in charge of classes will always be glad to give any help and advice in their power, and students are earnestly requested to apply to one or the other in any case where they are in doubt as to the right course before taking action Students should consult the Officers in-charge of their classes for advice before referring the case to the Principal, see Order No 11

13 Any case of personal violence by one student to another, or by a student to any other person, will be punished severely A student is never to take the law into his own hands, but is to report any grievance direct to the Officer in charge of his class for enquiry

14 Students wishing to see the Principal should apply for permission through the Officer in charge of their class. Direct application to the Principal is contrary to orders. Petitions signed by a number of students are not allowed. Any matter affecting a class or a number of students should be brought to notice by the senior student concerned.

15 Students are strongly recommended to take a fair amount of bodily exercise regularly. Too much poring over books is very apt to muddle the brain and the active duties of the Engineering profession require a man to be as well trained physically as mentally to enable him to discharge them properly. Marks are allotted for games etc.

16 The Library is open daily at the hours specified in the Library rules. Students are invited to avail themselves of it. The periodicals and papers placed on the Reading Room tables for general use are not to be removed from the rooms. Loud talking in the Library or Reading Rooms is strictly prohibited.

17 Students are forbidden even though possessing a licence to bring firearms into their quarters. Firearms may with the permission of the Principal be stored in the College armoury. No student is to bring any firearms to the College without first obtaining the Principal's permission.

18 Students may keep dogs but they must not be left loose or unattended. Dogs must invariably be chained up at night. All dogs must be registered and numbered in a register kept by the Personal Assistant to the Principal and must wear a collar and a special badge. Any dog found within the lines without a collar and badge is liable to be shot. The Personal Assistant will supply the necessary badges on request. These badges may be returned at any time when not needed and payment will be refunded.

19 Dancing, singing parties, and the playing of musical instruments in the open are not allowed without the special sanction of the Principal in every case

20 Students are warned to be very careful to have their quarters securely locked when they are absent from them or when sleeping outside during the hot weather Any case of theft either of the property of a student or of Government must be reported immediately to the Personal Assistant to the Principal The Personal Assistant to the Principal will at once request the police to take prompt action He will inform the Officer in charge of the class concerned at the first opportunity during College hours or earlier if he considers it to be necessary

21 All students are expected at all times to be dressed in a neat and tidy manner, whether in or out of class and must not appear in class in flannels or shorts used for games, etc without special permission There will be no objection to students wearing khaki shorts and long stockings during the summer, viz from April 1

22 Students should bear in mind that this is a competitive College and that any means tending to give any one student an unfair advantage must render the competition unequal and in time reduce the value of diplomas and certificates granted and affect the good name of the College For any breach of this rule severe action will be taken probably expulsion

23 Private servants are not allowed to enter the class rooms Drawing boards, etc should be taken from and made over to, servants in the verandah by the student to whom they belong Private servants are not allowed to loiter in the verandahs of the College and students are expected to see that this rule is enforced

24 Students must occupy seats at the numbered tables in the order of their standing in the class. Particular care should be taken not to splash ink on the tables walls or floors or to deface the furniture of classrooms and lecture rooms in any way by writing or cutting.

25 Students wishing to have baggage or parcels brought to the College from the Railway Station should give notice to the Personal Assistant to the Principal before 2 p.m. on the day the goods arrive. This notice should be in writing giving the number of their quarters and a detail of the baggage or parcel. The railway receipt signed and the amount due for railway carriage should be sent with the notice.

26 All students on meeting the Principal or any member of the staff of the College will salute them in a respectful manner. All students will address members of the College teaching staff Europeans and Indians, as 'Sir'.

27 In any class the student standing first in order of merit will be the senior. The senior of a class is responsible for reporting promptly to the Officer in charge of his class any unusual occurrences or circumstances connected with his class. He will take charge of survey parties and arrange all details in camps.

28 Fruit on trees on the College Estate is not to be plucked by students or their servants.

29 Two guest rooms, one for the Civil Engineer and the other for the Overseer Class are available for the use of the relatives of students on application to the Personal Assistant to the Principal who will be glad to help students in accommodating any relatives provided reasonable timely notice is given to him.

30. Students are not allowed to be members of outside societies, nor are they allowed to join in discussions on public matters except such as are organized by the Officers in charge of their class

31. Students are expressly forbidden to approach examiners, whether internal or external, with enquiries concerning marks, either prior to or subsequent to publication. After publication should any student think some error has been made, he is to submit an application in writing to the Principal on the matter through the Officer in charge of his class. Any student not observing this rule will be punished severely, probably with expulsion.

32. Students will not be permitted to appear for any external examination during their College course except to complete a university examination incompleting through sickness prior to their admission.

33. The attendance of all students at the annual College Sports and Regatta is compulsory.

34. There are the following shops generally on the College Estate —

(i) Banya's, (ii) Tailor's, (iii) Shoemaker's, (iv) Sweet meat seller's as well as a General stores Bakery Aerated water, Dairy. These have been established for the benefit of the students and under the strict supervision of the College authorities. Students are requested, in their own interests, to patronise these in preference to others.

Leave.

35 (a) No student is allowed to leave the station* without first obtaining written sanction of the Officer in charge of his class. Requests for leave must be made to these officers who

* Note—For purposes of this order Salanganpur and Thakur nagar taken as within the station.

will at their discretion grant such leave as is covered by College non working days or holidays. In all other cases, these officers will submit these requests to the Principal with their recommendations.

If the leave is sanctioned the Officer in charge of the class will hand over to the student concerned two copies of the permit to leave the station with orders to give one copy *personally* to his Hostel Superintendent and to hand in the other at the College Office before proceeding on leave.

On return from leave the student will report in writing to his Hostel Superintendent the date and time of his arrival. The Hostel Superintendent will send this information to the Officer in-charge of the class making any remarks that he may think to be necessary.

In ordinary circumstances all requests for leave must be submitted before noon on the day prior to that on which leave is required. All requests for leave which are not submitted in the prescribed period will be sanctioned or recommended by the Officer in charge of the class, as the case may be, in very special circumstances regarding which the student has produced cogent reasons.

35 (ii) When the period of leave required includes any College class attendance periods or College functions at which the attendance of a student is compulsory, the student before approaching the Officer in charge of his class for the leave must obtain permission of the members of the staff concerned with the particular periods or compulsory College function in writing and this must be shown to the Officer in-charge of the class before the request is made.

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35 (i) No student is allowed to leave the station* without first obtaining written sanction of the Officer in charge of his class. Requests for leave must be made to the officers who

* Note—For purposes of this order S. Laramp and Ilakkar may be taken as being in the station.

will at their discretion grant such leave as is covered by College non working days or holidays. In all other cases these officers will submit the requests to the Principal with their recommendations.

If the leave is sanctioned the Officer in charge of the class will hand over to the student concerned two copies of the permit to leave the station with orders to give one copy *personally* to his Hostel Superintendent and to hand in the other at the College Office before proceeding on leave.

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In ordinary circumstances all requests for leave must be submitted before noon on the day prior to that on which leave is required. All requests for leave which are not submitted in the prescribed period will be sanctioned or recommended by the Officer in charge of the class as the case may be in very special circumstances regarding which the student has produced cogent reasons.

35 (ii) When the period of leave required includes any College class attendance periods or College functions at which the attendance of a student is compulsory the student before approaching the Officer-in charge of his class for the leave must obtain permission of the members of the staff concerned with the particular periods or compulsory College function in writing and this must be shown to the Officer in charge of the class before the request is made.

35 (iii). Students are warned that absence without leave is a serious breach of rules. At the commencement of any College attendance period the senior student present will at once report to the member of the staff taking such period the absence or sickness of any student.

35 (iv). To obtain leave and proceed on short leave, and then to ask for an extension, *except on the most urgent grounds*, is a practice considered highly objectionable in Government service and the College authorities take the same view. The mere dispatch of an application for extension is no excuse for failure to return on the proper date. A sanction to the extension by the Principal is necessary, and to obtain this, each application should be accompanied by a stamped addressed envelope, and all telegrams are to be prepaid. These should be dispatched to the Principal early enough for the applicant to receive a reply in time. *If no reply is received the application for extension should be considered as refused.* Students who, being on leave, fail to return to the College on the day on which the leave expires without receiving sanction to an extension, will be considered guilty of disobedience of orders and will be punished accordingly.

35 (v). Students are not required to apply for leave to enjoy sanctioned holidays in the Station or for the Vacation out of the Station. No leave will be given to attend the weddings of relatives.

Sickness

36 (i). The College Medical Officer will attend at the College Hospital at the following times:—

(1) 1st half session	.. 1	Daily 7.30 a.m. to
October 16 to February 14	.. 1	8.30 a.m.

- | | |
|------------------------|------------------|
| (ii) 2nd half session | { Daily 7 a m to |
| February 15 to July 14 | { 8 a m |
| (iii) Vacation | { Daily 7 a m to |
| July 1 to October 15 | { 8 a m |

The College Hospital Compounder will attend at the College Hospital daily throughout the year from 7 a m to 12 noon and in addition during the—

- | | |
|------------------------------------|----------------------------|
| (i) 1st half session | Daily 5 p m to 6 p m |
| (ii) 2nd half session and vacation | Daily 5 30 p m to 6 30 p m |

The College Medical Officer as soon as possible after his hours of attendance will submit his daily sick reports as follows —

- (i) One to the Principal reporting all who are sick
- (ii) One to the Officer in charge of the Civil Engineer class reporting only those Civil Engineer students who are sick
- (iii) One to the Headmaster Overseer class reporting only those Overseer class students who are sick
- (iv) One to the Officer in charge Physical training when the same is going on including only names of Civil Engineer and Overseer class students who are sick or are exempted from Physical training

36 (ii) (a) All students who require medical attendance are to present themselves at the College Hospital during the hours of attendance of the College Medical Officer

(b) Those who are too ill to attend personally are to send notice to the College Medical Officer at the College Hospital during his hours of attendance when the Medical Officer will visit them at their quarters

(c) Those who fall ill either before or after the hours of attendance of the College Medical Officer are to report

themselves to the College Hospital and to see the Compounder. They are then to carry out the instructions given them by the Compounder, who is to report all such cases to the Medical Officer when next in attendance. The Medical Officer will keep in attendance at the College Hospital a peon at all hours when the Compounder is not present, whose duty it will be to call the Compounder from his quarters.

(d) If a student be compelled to absent himself from class attendance on account of illness or if during College hours obtains permission to leave for the same reason, he is to report at once to the College Hospital [*vide* section (c) above].

(e) In really serious cases the students will send notice to the College Hospital and it will be the duty of the Compounder to at once send for the Medical Officer, and when the Compounder is off duty, he is to arrange for a peon to be left at the College Hospital, who can either call the Compounder or the Medical Officer, as the case may be. The Medical Officer's address is the Roorkee Civil Hospital.

36 (iii) A student placed on the sick list will remain on the sick list till taken off by the Medical Officer. He will report daily at the Hospital at the specified hour while on the sick list, unless specially exempted by that Officer. Students on the sick list excused from work or attendance at College are not permitted to leave their quarters, except for medical purposes, without the written authority of the Medical Officer, initialed by the Principal. On the written application of the Medical Officer, the Personal Assistant to the Principal is authorized to erect a necessary tent near the quarters of any sick student.

36 (iv) Students who have been frequently sick during the year will lose marks for physical fitness.

36 (v) All Indian servants belonging to the College or to students who require medical treatment should attend at the Hospital during the authorized hours

36 (vi) No student may be treated privately All cases of sickness must be reported and entered on the Sick report Any student concealing a case of sickness will be severely punished

36 (vii) The College Medical Officer will visit the hostels, cook houses latrines and grounds once a week as also the dairy and shops, to see that the sanitary arrangements etc are properly carried out, and will send a report every Monday morning to the Principal concerning any defects he may observe or any improvements that he may wish to suggest

Examinations

37 (i) *The work given in by students at examinations, projects or at any time during the course is accepted as their own honest and unaided work, any attempt to deceive the Staff about it in any way whatever will, on detection, be punished by immediate expulsion No excuse whatever will be accepted*

37 (ii) Any student not present at any examination from whatever cause will lose all marks for the same

37 (iii) Appraising the answers to an examination is a very tedious and difficult matter, and each slovenly set of answers wastes time and temper, and causes all to suffer The following rules which are really in favour of good, honest and neat work will be strictly enforced, and marks deducted in each case in which they are infringed or not acted up to —

(a) Carefully read and minutely adhere to the instructions printed on the cover of the answer books

issued to students These instructions are as follows —

- (i) Number your answers to correspond with the numbers of the questions, and if the question is divided into sub heads, be careful to number these
- (ii) No part of this book is to be torn off
- (iii) The whole of the work, including all rough work, is to be written in this book
- (iv) No writing whatever is allowed on any other paper, except squared paper when required for an answer Each sheet of squared paper must be headed as required under regulation (A) or (B) of the answer book
- (v) The paper should be ruled or folded, so as to make a margin on the left hand side
- (vi) The handwriting should be distinct
- (vii) Only one side of the paper is to be written upon
The odd numbered pages, starting with page 1 are to be used for answers and the even numbered pages may be used for rough work, if required, otherwise may be used for answering the questions
- (viii) In the event of this book becoming filled up another book must be used and the number used written below There is a tendency amongst students to waste their own and the examiner's time by writing unnecessarily lengthy answers by needless repetition and by using a large number of answer books It should seldom be necessary to use more than one answer book All answers should be as concise as possible and, if sufficient thought

is exercised before the answer is committed to paper all repetition can be avoided. Careless and lengthy answers will entail a loss of marks.

- (ix) These books are not to be folded but forwarded flat and if more than one book is used by the same student the second and succeeding books must be *tagged with the first*.
- (x) Students with roll numbers using this book are not to make any allusion to their names or initials, or to make any marks by which they may be identified.
- (xi) The index on the inside of the cover of this book must be carefully filled in. Students must fill in against each question attempted the word 'answered'. In the case of questions having separate parts (a), (b) (c) each separate part attempted should be indexed as 'answered'. Nothing should be entered against questions which have not been attempted.
- (b) In sessional and final examinations each student will be given a roll number to use instead of his name. This must be written in the right hand top corner of the cover of *each* book. The number of each question must be written in the *margin of each page*.
- (c) The examiner will mark under three heads —
 - (i) Knowledge of the subject
 - (ii) Accuracy in working
 - (iii) Clearness of working and expression

If the student fails in (c) (iii) even though perfect in (c)

(i) and (ii), he will lose marks. He is bound to show clearly

how he obtained his results, and the examiner has no time to waste marking slovenly work or roundabout methods

Take a mathematical examination for example —

(i) Each process should be headed with a word or two of explanation

(ii) All work having to be done in the book, each step of calculation that cannot be done in the head must be done on the even numbered pages

(iii) All work known to be useless must be scored out

(iv) The answer must be plainly marked Write the word 'answer' opposite the answer in each case thus, Ans — "

(d) Students must bring their own pens, inks, pencils and drawing instruments The use of slide-rules may be permitted at the discretion of the examiner No borrowing from each other is allowed during an examination

(e) No books or papers of any sort are to be brought into the examination room Logarithm tables graph and drawing paper, when necessary, will be provided

(f) No student may leave his seat for any reason except to quit the room After having once left the room, for any reason whatever, he cannot return A student wanting another book will call an attendant who will bring it to him

(g) When time is up the examiner will call out, "cease writing" after which order, pen must not be put to paper for any purpose whatever

(h) The use of red ink or of coloured pencils should be avoided as far as possible as the examiner usually makes corrections in coloured pencil

Project Regulations (including Tours)

Notes for the guidance of students in drawing up Projects

38 (i) *The collaboration of students during Projects is forbidden and in this connexion attention is expressly drawn to Standing Order No 37 (i) and to the penalty for its infringement. It must be remembered that Projects are competitive examinations subject to the ordinary examination rules. Students are warned that they are allowed to obtain assistance solely from (a) technical books in general, (b) plans and models in the Model Room and Library, and (c) plans of any existing engineering work which they may obtain from a source, which is equally open to other students of their year.**

It is forbidden to obtain survey maps or level charts from outside sources, or any assistance in designing or calculating from outside the College. Students are not permitted to obtain previous engineering projects executed by past students for the purpose of assisting them in their work. Finally, in the absence of specific project regulations, the best guide to a student's conduct is his own sense of honour.

38 (ii) *A project is expected to be a piece of work such that a senior officer can examine, criticize, pass orders on it, and hand it over for execution. To ensure this result it must be complete in every sense. It must include a clear concise report with cross references to all drawings; a survey which can be checked with ease and celerity, and drawings from which work or working drawings can be produced and from which the estimate can be checked. The drawings must be neat, but should have no unnecessary elaboration. Calculations should be given for all important structural items. A student must carefully think out his work. Having gone over*

* *Vide Standing Order No 2^o such plans etc should, in any case, be shown to the Professor of Civil Engineering.*

the ground he should scheme out his survey. To ensure that he has time to submit all necessary work, all work in the field must be done neatly and methodically.

38 (iii) Having completed the field work the student is required to complete his project in the College. Work on drawings in quarters is not permitted but this does not prevent a student from thinking out his designs, and making sketches and calculations in his spare time. He must again map out a methodical scheme if he is to submit a complete project. Every drawing should be numbered, with a heading showing what it represents. A scale should be shown on each drawing and sufficient dimensions should be given both for the estimate and for actual work. References to conventional signs need only be shown on one sheet for the whole project.

38 (iv) Above all, the student should endeavour to show a sense of proportion as regards the relative importance of the various portions of his work. The whole of such details as galvanized or tiled roofs, railings, gateways etc. should be drawn sufficiently to show the style proposed. All calculations for applied mechanics should be fastened together and full references given in the text to all drawings. All details necessary to check the calculations should be given. All calculations referring to a particular design should run concurrently, and be prefaced by a clear statement of the data connected with that design. No calculations should be shown on the drawings, but magnitudes of the forces represented should be clearly shown. No marks will be allotted for applied mechanics drawings which are not accompanied by calculations in the report. The important details in drawing, the finished survey, estimate, calculations and report should all be completed first. Cross references and headings should be carefully given so that it may be easy to follow from the

report or estimate to what reference is being made. Any leisure time can then if desired be devoted to type drawings of well known details and to generally beautifying, cleaning and elaborating the drawings. The cleaning of drawings by servants or menials is forbidden.

38 (v) The senior student is responsible for the discipline of the camp. He will at once report any authenticated case of a breach of the camp regulations and pending the arrival of instructions from the Officer in charge of the class he is empowered to issue such instructions to students or to khakas as he may consider necessary.

38 (vi) Until a student has finally completed his field work in camp he is not permitted to visit Roorkee unless specially authorized to do so by the Officer in charge of the class. If a student on account of absolutely imperative circumstances desires to visit Roorkee on leave from the project camp he must submit a written application on a leave application form for leave at least 24 hours before he desires to quit the camp, and he is not authorized to proceed on leave until he has received the necessary permission. Such leave will only be granted in very exceptional cases and on receipt of conclusive evidence that it is absolutely necessary.

38 (vii) Students in camp are not compelled to work on Sundays or on general College holidays, but they are allowed to do so. *No extension of time in camp or in College will be given to such students as observe these holidays.*

38 (viii) No work, however, is permitted in the College* rooms on Sundays after the return from camp though such days may be utilized for work which is permitted in quarters.

38 (ix) All students while in camp are to keep a diary showing each day the hour of leaving camp and the hour of return, the nature and extent of the survey or other work

executed, giving the names of any villages or other prominent points visited, and any other concise information useful to an examiner in checking the progress of the work. *The diary must always be on the person of the student* so that it can be produced at once when demanded, and it must be kept up to date and must be written in ink.

38 (x) Students should leave camp for work not later than 8 0 a m daily

38 (xi) Every endeavour should be made to avoid giving offence to villagers near the camp or elsewhere by needless destruction of crops or by other damage. Poultry must not be shot without permission of the local villagers

38 (xii) Every camping ground is to be kept clean. The second senior student will be responsible for the supervision of sanitation under the direction of the senior student. Paper etc must not be left lying about. Fires are not to be lighted inside the limits of the camp or near tents. Tins of oil are not to be kept in Government tents. Lamps must not be placed on tables, where there is a danger of the tent catching fire. Before a storm all lamps must be extinguished.

38 (xiii) Necessary tents should be located on the side of the camp away from the direction from which the prevailing wind blows and should be, if possible, 100 yards or more from the camp.

38 (xiv) The purity of the water supply for drinking and cooking should be carefully ensured. Drinking water should be boiled before use. The washing of clothes should not be permitted near a well from which the supply of drinking water is drawn, and in the case of stream the washing of clothes must take place down stream of the drinking water site.

38 (xv) After return to the College all students have to work in the College on the preparation of the project during

the hours ordered from time to time. Permission for exemption has to be obtained from the Officer in charge of the class.

38 (xvi) Students will be responsible for their drawings and original survey records which are on no account, to be taken to their quarters but which must be kept filed in their classroom in the almirahs set aside for this purpose. The issuing officer will stamp all paper issued and on each sheet the student to whom it is issued must immediately enter his roll number.

38 (xvii) Government tents are classified as follows —

E P tents to accommodate four students **Class I**

Semi Swiss Cottage large two students	Class II
---------------------------------------	----------

small one student Class III

Shuldaries, large to accommodate not less than 15
khalassies

Shuldaries small to accommodate not less than 8
kha assies

As the majority of the class consists of Indians, they will be accommodated in batches of 4 in each E P tent. If there are 3 Mohamedans they will occupy one E P tent, but 2 Mohamedans will be accommodated in a Class II tent.

For example if the class consists of —

Case I—13 Hindus and 3 Mohamedans Then the tents will be allotted as follows —3 tents Class I 1 tent Class III for the Hindus and 1 tent Class I for the Mohamedans

Case II — 14 Hindus and 2 Mohamedans 3 tents Class I
and 2 tents Class II

In the case of Europeans tents of Classes II and III will be available according to the above scale

There will be one E P tent with drugget, for the Engineer Class Club and one single pole tent, each with drugget for the European and Mohamedan messes, provided that each has three or more members

Necessary tents are for Indians only

Furniture—Each student will be allowed 1 bed 1 mattress 1 folding chair and 1 folding table (the latter two being camp furniture) Club and Mess tents will have collapsible tables

38 (xviii) Two dak coolies for the camp, one of whom will report daily to the senior student will be allowed, provided the camp is within a 15 mile limit, and three dak coolies for a 20 mile limit

38 (xix) An allowance of Re 1 per mile for the survey is sanctioned to each student for the cost of flags pegs etc subject to a maximum of Rs 10 No other contingent charges are admissible and this also includes such items as stationery, portfolios etc

38 (xx) Students who are unable to finance themselves can on applying in writing to the Principal receive an advance up to Rs 50 for payment to khalassies This sum will be deducted from the total of the bill on the close of the project The success with which students manage their coolies and make their camping arrangements will be considered in awarding marks for 'Fitness for Department'

38 (xxi) Instruments as required will be issued to each student each instrument bearing the class number of the student The student will be personally responsible for these instruments being in adjustment and in good working order Any damage sustained will be made good by the student and he will not be permitted to exchange his instrument or stand with another student and no student will be permitted to lend out his instrument The damaged instrument with a report must be sent immediately to headquarters

Students will always accompany their khalassies proceeding to and returning from work In inclement weather instruments should be put away in their boxes and the boxes protect-

ed from rain, sun and dust. When an instrument is kept standing for some time in the sun, the cloth bag should be placed over it for protection. Level staves should be crumpled together when not in use, and they should not be leant against walls and trees, but placed horizontally on the ground and protected from dew, rain and white ants.

38 (xxii) Except level staves, plane table stands and chains, no instrument should be carried on carts. The khalassias must be utilized for conveying such instruments to the field and back to headquarters. Plane tables may be placed face to face and taken in a spring cart, but this only when the student himself is travelling with them.

38 (xxiii) The boundaries of all fields must be surveyed provided they come within the specified limits of the alignment, submerged area, etc. Village boundaries must also be defined, these are usually shown on the guide map or index map issued. Traverse work and triangulation must be based on true north and the magnetic variation at the time should be clearly noted on each map and drawing. Every use should be made of embedded stones, plinths of building, etc. as bench marks in levelling, even if such objects are to some extent without the limits of the work.

38 (xxiv) Plane table sections, note books, etc. must have the roll number of the students clearly written on them. All plane table sections and records must be kept up to date in ink, and index and cross reference work should be made in the field. Level and traverse field books must be recorded in ink in the field.

38 (xxv) If a chain be used, the chain should be checked daily and the chain error noted in the field book. Levels should be tested for adjustment daily.

38 (xxvi) All calculations for curves, azimuths, etc. should be contained in the survey note book.

38 (xxvii) Students will see that as little damage as possible is inflicted on standing crops, and if chaining be necessary through such crops, the chain should be lifted, not *dragged*, from arrow to arrow. The instrument should be set up as near as possible to the line of demarcation between fields to avoid repeated trampling down of wheat, gram, etc.

38 (xxviii) Khalassies will be enlisted at Roorkee, and they will be entitled ordinarily to one day's leave per week, if the project be within 12 miles of Roorkee, or two days in a fortnight if beyond this limit. The day or days for leave is one for the student to arrange. Khalassies will receive pay at the prevailing rates for labour and tindals (one per squad of 4 men) will, if recommended, receive pay at the rate of Re 1 extra per mensem. Each khalassie can obtain a record sheet which will entitle him to prior claim for enlistment for both the triangulation and project camps. A tindal on a higher rate of pay loses claim to the extra allowance if he absents himself from any of the above camps. Khalassies will, after engagement, receive an advance of Rs 2 and will, after the advance has been paid, work in arrears of pay and obtain other advances against the final payment. A student engaged on independent work will, if circumstances allow, have a squad of 4 men. He will not be permitted to work with more.

38 (xxix) Civil Engineer and Overseer class students of the Thomason College of Civil Engineering, Roorkee, when proceeding on tours in connexion with project work or to visit works of interests, are entitled to travelling allowance at the following rates —

A—Civil Engineer class students—

- (i) Railway fare at single intermediate concessional rates applicable to students travelling in parties

- and when such rates are not available then a single intermediate class fare for each student
- (ii) Actual expenses for road journeys to the limit of mileage allowance admissible to officers of third class viz annas two per mile
 - (iii) Annas fourteen per night per student if detained in a town while on tour
 - (iv) Single third class railway fare for rail journeys and one anna per mile for road journeys for each servant at the rate of one servant for every five students and subject to a limit of four servants for a party of over 15 students

B—Overseer class students—

- (i) Single fare of the third class for journeys by rail and one anna per mile for journeys by road
- (ii) Daily allowance at the rate of eight annas for halts outside headquarters

Students when not accompanied by a member of the College staff will be under the charge of the senior student

Workshop Rules

39 (i) Every student attending the Workshop course will be allotted a special number. On entering the shop he will be given a corresponding ticket. He will make the ticket over to the Foreman Instructor when taking his tools and receive it back when he has returned them correct at the close of the period. Upon completion of the period each student will check with and hand over to the Foreman all tools. When leaving the Workshops each student will give up his ticket at the gate.

39 (ii) Breakages and injuries to tools machines and Government property generally must in all cases be reported at once to the Lecturer in charge

38 (xxvii). Students will see that as little damage as possible is inflicted on standing crops, and if chaining be necessary through such crops, the chain should be lifted, not *dragged*, from arrow to arrow. The instrument should be set up as near as possible to the line of demarcation between fields to avoid repeated trampling down of wheat, gram, etc.

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39 (iii) Materials for instructional work will be issued to students by the Foreman with instructions regarding the work to be done. On completion of the work it must be shown to the Lecturer and approved before a more advanced exercise can be given.

39 (iv) Students are prohibited from working on any machine unless especially authorized in this respect by the Lecturer in charge or the Foreman of the shop.

39 (v) Loose clothing and *puggies* may not be worn in the Workshops.

39 (vi) Students must not enter any shop other than that in which their class is working without permission from the Lecturer in charge.

Rules regarding student's independent work in the College Workshops

39 (vii) Every student wishing to do private work must first show to the Assistant Professor in charge a fully dimensioned sketch of the article he wishes to make. If sanctioned by the Assistant Professor the job will be given a workshop number and material issued for it.

39 (viii) All articles being made and the materials issued must on no account be removed from the Workshop by students but must be left in charge of the Shop Foreman. When any article is complete it must be handed over to the Assistant Professor, and if satisfactory after examination by him it will be issued to the student who made it.

39 (ix) Private work must not be done during hours allotted to Workshop Practice.

Laboratory Rules
General

40 (i) The greatest care must be taken in handling and using all apparatus any breakage or damage which occurs

must be reported at once to the Professor or Lecturer. Any damage or loss resulting from carelessness will be charged to the student or students responsible for it.

40 (ii) After finishing any experiment, the student or students must replace in their proper positions all parts of the apparatus and reagent bottles used. The whole apparatus is to be replaced in its case if there be one. When using boxes of weights especial attention is drawn to this rule.

40 (iii) When working the benches, etc. must be kept as clean as possible, students being careful to avoid any unnecessary dirt or mess.

40 (iv) Students must enter in a laboratory note book, especially kept for the purpose details of each experiment performed by them during or immediately after its completion. Such rough notes must be recopied, kept up to date, and be always ready for inspection when required. In the Physical and Electrical Laboratories after finishing an experiment, students must mark it off on the form put up in the laboratory for the purpose.

40 (v) Students must do all experimental work entirely independently. All necessary explanations, etc. will be given by the Professor or Lecturer. Consultation between students is strictly forbidden during experimental work except when two or more students are ordered to conduct an experiment together.

40 (vi) All apparatus, chemicals, etc. are supplied free to students, but any breakage or damage will be charged to the student or students responsible for it.

Chemical Laboratory Rules

40 (vii) Each student must provide himself with a rough note book, a piece of platinum wire, a dustier, padlock and key.

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Chemical Laboratory Rules

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and a copy of each of the prescribed text books Keys of the padlocks should be labelled and left with the Lecturer

40 (viii) Students should be careful not to waste chemicals, either by spilling them about, or by using unnecessarily large quantities

40 (ix) All experiments giving rise to poisonous or obnoxious fumes must be performed in the fume chambers

40 (x) Students are advised, when heating either solids or liquids in test tubes, to direct the mouths of the tubes to wards the reagent shelves, in order to prevent any accident occurring to their neighbours

40 (xi) Students are on no account to touch the switches regulating the ventilation of the fume chambers

Laboratory Balance Room Rules

40 (xii) Students, when weighing, should always place the article to be weighed on the scale pan on the *left* hand side of the balance and the weights on the *right* hand side

40 (xiii) Chemicals are on no account to be placed directly upon the scale pans Chemicals to be weighed should be either put upon a watch glass, or placed in a weighing bottle Everything to be weighed should be *scrupulously clean and perfectly dry*

40 (xiv) When weighing, the balance pans should be *slowly and carefully* released The weights are *never* to be placed upon the scale pan while the balance pans are free to swing

40 (xv) The weights are *on no account* to be touched with the fingers but should be removed by means of the *cil*pers furnished with each box of weights

40 (xvi) During the process of weighing the weights are to be removed, one by one, from the weight box and *carefully* placed upon the balance pan Weights must not be placed upon the top of each other

40 (xvii) Check the result of each weighing by adding together the weights removed from the weight box, then carefully remove weights from the balance pan

40 (xviii) All results must be carefully recorded in a note book and not on scraps of paper which are liable to be lost

40 (xix) Students when they have finished weighing, should remove the rider from the beam of the balance, see that the balance pans are not free to swing, close the balance, replace the balance cover, and see that all the weights are correctly placed in the weight box

40 (xx) Hot crucibles are *on no account* to be put upon the balance pans. Crucibles should be allowed to cool in a desiccator

40 (xxi) Apparatus should *not* be left upon the balance tables

40 (xxii) Should any of the balances be defective, the matter should be reported *at once* to the Professor or Lecturer

Engineering Laboratory Rules

40 (xxiii) The accuracy of the machines and instruments, depending chiefly upon their correct adjustment, students are forbidden to tamper with them in any way

40 (xxiv) Steam valves must never be opened except in the presence of a member of the staff. Serious accidents have happened in the past through non observance of this rule

40 (xxv) Reports of tests will be submitted on the day following that on which the tests were made. The report, with any corrections, will be returned to the student, after checking on the student's next attendance at the laboratory

Survey Laboratory Rules

40 (xxvi). The greatest care must be taken in handling and using all survey instruments. Any leakage or damage which occurs must be reported at once to the Assistant Profes

son or Lecturer A student is personally responsible for any instrument issued to him, and when kept by him in his quarters he should see that it is put in a safe place and not where it is likely to be knocked over by his servant in cleaning the room. No instrument should be left unattended in the field. In going to or returning from work in the field *students (except Civil Engineer Class, 3rd Year) must, on no account, hand their instruments over to servants to carry*. Any damage done to an instrument must be made good by the student to whom the instrument was issued, and, in the case where students are working in parties, the cost will be divided among the members of the party, unless it can be shown clearly that one or other of the party was directly responsible for the damage done. In addition to having to pay for the damage caused, the student or students will have marks deducted either from their "Fitness for department" or "Survey" groups or from both.

College office

41 (i) Students are strictly prohibited from entering the College office rooms. Any work which they may have with the office should be transacted over the counters.

41 (ii) A bill for all College dues will be sent to all the students before the time fixed for payment of such dues every month.

41 (iii) All payments must be made by students in person at the counter of the College Treasury, between the hours of 11 a.m. to 3 p.m. on the days as may be ordered.

Cheques on listed banks in payment of dues will be accepted in the case of dues from October to May provided cashing charges are included. Dues for June and July must be paid in cash.

The College cashier will grant a receipt for the amount paid.

As far as possible the students must bring the exact amount due, to avoid any delay in transaction at the counter.

Central Library Rules

General

42 (i). The Library is maintained for the use of the Staff and students of the College. It is also available to Gazetted Government officers resident in Roorkee, and, under restrictions, to the general public resident in Roorkee. Books are issued for reference purposes and on loan in accordance with these rules.

42 (ii). Certain works of reference can only be consulted in the Library and Reading rooms, and may not be removed from these rooms without the sanction of the Principal.

42 (iii). No book will be issued on loan from the Library until a signed receipt for the same has been handed to the Librarian; this receipt will be returned when the book is given back.

42 (iv). Books are liable to be recalled at any time by the Librarian. A new book may only be kept for 7 days. The term 'new book' is one which has been received within six months of the date of issue.

42 (v). The transfer of books on loan to any other person is prohibited.

42 (vi). Persons making use of the Library are forbidden to remove books from the shelves. The Librarian on being informed of its catalogue number will supply any book required.

42 (vii). The Library will be closed annually to the issue of books from approximately July 5 to 15. All books out on loan must be returned not later than July 5.

42 (viii). Persons damaging or losing books will be charged with the full value of the same. The practice of marking or scribbling in books is strictly prohibited.

42 (ix) Persons infringing any Library rules are liable to be denied the use of the Library.

42 (x) The Library is open daily during the College session, Sundays and holidays excepted, for the issue and return of books from 11 a m to 3 p m *During the vacation it is open on Thursdays only from 9 a m to 11 a m* The Reading rooms are open daily during the College session from 8 a m to 4 p m , except on Sundays and holidays

SPECIAL

College Educational Staff

42 (xi) A special issue of books for departmental use for periods not longer than one session is allowable to Professors and Heads of College departments provided the number issued to any one department does not exceed twenty at any one time Such a special issue will require the sanction of the Principal Normally, in order that students should be able to consult any technical book, such books, if taken out by any member of the Staff, should be returned *within one month*, except as in Rule 42 (iv) If the Professor is of opinion, when he takes out the book, that he will require the use of it for longer than one month, he should put up an indent for a duplicate copy for the Central Library (chargeable to his laboratory grant) within one week of the issue of the book

42 (xii) All members of the Educational Staff are entitled to keep books on loan to a limit of eight volumes

42 (xiii) Applications for works already on loan will be registered by the Librarian, and on return will be issued to the applicants in order of priority.

42 (xiv) The members of the Educational Staff are exempted from Rule 42 (vi) and are permitted to remove books from the shelves, but not from the Library without signing the usual form and depositing same with the Librarian

Students

42 (xv) Text books on sale at the Book Depot will not be issued to students

42 (xvi) Students are not permitted to retain any book for a period longer than 14 days except as in Rule 42 (iv) and 42 (xx) Re issues of any book after it has been returned will not be made to the same borrower until after the lapse of 7 days Students are entitled to keep books on loan up to the limits for the different classes given below, but no book may be retained for a period longer than 14 days

Engineer class	5 vols
Overseer class and Draftsman class	3 vols

42 (xvii) Rule 42 (xiii) is also applicable to students for scientific works

42 (xviii) For the vacation books may be issued to students, up to a limit of 3 only, with the sanction of the Principal

42 (xix) Students borrowing books containing plates must personally check the number of plates and enter the actual number on the receipt The plates are to be checked again when the book is returned Books returned one day will not be re issued till 3 clear days have elapsed, except as in Rule 42 (xx) In order to obtain and return books students must attend in person

42 (xx) Students of all classes working on projects may only borrow 3 volumes at a time and are allowed to keep the

same for 3 clear days only. Books returned one day may not be issued before the following day to these students

Residents

42 (xxi) Members of the general public resident in Roorkee may, with the approval of the Principal, borrow books. The applications of non-commissioned officers and soldiers stationed in Roorkee should be submitted to the Principal through their Commanding Officer.

42 (xxii) All residents of Roorkee entitled to use the Library under any of these rules may keep books on loan up to a limit of six volumes, no book being retained for a longer period than one month, except as in Rule 42 (iv).

42 (xxiii) Residents about to leave the station, even for a short period, must return all Library books.

42 (xxiv) The term 'Members of the general public resident in Roorkee' means a head of a family, and the term includes his family but not as separate residents.

Non residents

42 (xxv) The Library, excluding works of fiction, is available to gazetted Government officers and other out station residents, in special cases, on application to the Principal, at whose discretion a deposit may be required to cover the full value of the books borrowed.

42 (xxvi) Those permitted to use the Library under Rule 42 (xxv) may keep books on loan up to a limit of six volumes, no book being retained for a longer period than two months. The cost of packing and carriage by registered post both ways being defrayed by the borrower. No 'new book' will be issued.

Thomsonian Society.

43 (i) The aim is to cultivate the faculty of exact expression in speech and to provide for rational discussion of scientific technical engineering literary and social subjects

Also to arrange lectures on subjects of general interest by *members of the College Staff or outsiders*

43 (ii) There shall be no admission fee or subscription of any kind

All members of the Staff and students of the Civil Engineer class shall be members *ipso facto*

43 (iii) The Principal will nominate every session a member of the Staff to be the President who in consultation with the Principal shall have full control over the activities of the Society

43 (iv) The students will elect a Secretary at a general meeting to be held after the mid sessional examination every year. He will keep a record of the activities of the Society and issue notices, with the approval of the President, for the various meetings

43 (v) A Vice President will be elected from among the 2nd year students, at a general meeting to be held after the mid sessional examination every year. He will assist the President and in his absence preside at meetings

43 (vi) The Secretary will arrange meetings with the approval of the President. At least fourteen days notice should be given of each meeting.

43 (vii) The debates shall be held in the premises of the Civil Engineer Class Students Club

Rules for the management of the College Magazine.

44 (i) The magazine will be called "The Lion, Thomason College Magazine" It will be under the control of a senior member of the Staff who will be called the "Director", and who will be appointed by the Principal every session

44 (ii) The Director will supervise its publication and control its finances

44 (iii) An Editor and an Assistant Editor will be appointed annually before the College vacation by the Director in consultation with the Principal The Editor may be either of the 2nd or 3rd year Civil Engineer Class, and the Assistant Editor will be an Overseer Class student of the 1st or 2nd year

44 (iv) The new Editor and Assistant Editor will take up their duties with the second issue of the session following their appointment The names of the new Editor and Assistant Editor will be announced in the first issue of the session following their appointment

44 (v) There will be as many issues during the session as possible (up to a maximum of 5), depending on articles submitted and if funds permit

44 (vi) A compulsory subscription of units four per annum for each of the 9 months of each session from each Civil Engineer class student and each Overseer class student

The above subscription will entitle each person named to one copy of each issue of the magazine Should any wish to purchase extra copies they may do so, if there are sufficient copies, at Re 1 2 per copy

44 (vii) The magazine will be kept on record in bound volumes in the College Library and in the Students Clubs

44 (viii) From time to time copies of the magazine may be sent to distinguished old alumni of the College and to certain institutions for purposes of exchange. A list of these will be sent to the College Office at the beginning of each session. The College Office will distribute the magazine to the subscribers

44 (ix) Writers of articles will be entitled to receive one extra copy free of charge. More copies will be supplied to them on payment of actual cost

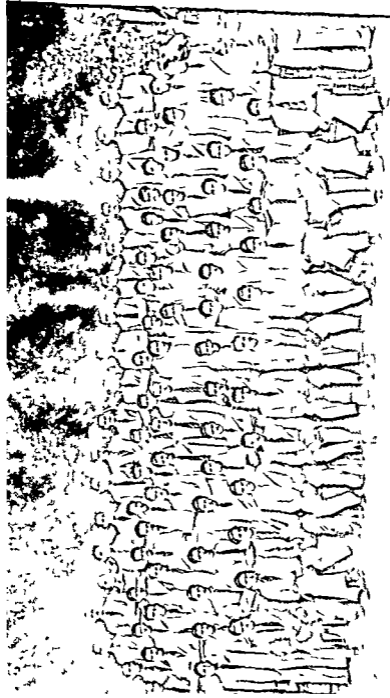
College dairy

45 All students are to obtain milk and butter from the College Dairy and from no other source. This Dairy is maintained for the good of their health and students are earnestly requested to see that their servants do not supply milk or butter from outside sources and by this means endanger the health and even risk the lives of students. Any servant detected supplying milk or butter to students from outside sources will be expelled from the College Estate, and students will be held responsible that their servants are informed of this fact. Butter and milk will be paid for through the Dairy bill.

Subscriptions to athletics and games.

46 Students of the Civil Engineer and Overseer classes have to pay the following donations and subscriptions —

(a) Civil Engineer Class



CIVIL ENGINEER CLASS CLUB

1941 '42

47 (ii) At the beginning of each session the Principal will nominate either himself or a member of the Senior Staff as President of the Club and another member of the Staff as Vice-President.

All affairs of the Club will be managed by an Executive Committee, the Chairman of which will be nominated by the Principal from among the 3rd year students, and eight honorary secretaries elected at a general meeting of the Club in the manner indicated below —

(a) General Secretary	} Elected from 2nd* year class members	} Elected at the close of the previous College session	
(b) News Secretary			
(c) Furniture Secretary			
(d) Garden Secretary			
(e) Billiards and Light ing Secretary	} Elected from 2nd or 3rd* year class mem bers	} Elected as soon as pos sible after commence ment of the College session	
(f) Music Secretary			
(g) Indoor Games Sec retary	} Elected from 1st year class members		
(h) Refreshment Sec retary			
	} Elected from any of the three classes		

A general meeting shall be called before the close of a College session to elect secretaries (a), (b), (c), (d), (e) and (f) for the ensuing College session. The new secretaries will take over charge of their respective duties from the retiring secretaries together with the account books and all connected papers before the College vacation commences and report their having done so to the Vice-President.

Before the College vacation commences the retiring secretaries (g) and (h) shall hand over charge to the general secretary for the ensuing College session appointed at the General Meeting together with all account books and all connected papers and report their having done so to the Vice-President.

* Denotes those members who will become 2nd and 3rd year members during the immediately ensuing College session.

A general meeting shall be called as soon as possible after the commencement of a College session to elect secretaries (g) and (h) and to these newly elected secretaries (g) and (h) the General Secretary will hand over all the account books and connected papers which have been in his custody during the College vacation without delay and report his having done so to the Vice President .

47 (iii) The Club reserves the right to enforce an office on a member of the 2nd year class at an election for this purpose whenever an emergency arises for so doing

47 (iv) During the temporary absence of any secretary from Roorkee he will arrange for his work to be carried out by some other member proposed by him and approved by the President

47 (v) At the general meeting held before the close of a College session at which certain new secretaries for the ensuing session are elected a Finance Committee shall be formed for preparing the annual budget. The Committee will include —

- (a) A chairman (elected from 3rd year class)
- (b) Four members other than secretaries and elected from each class
- (c) The General Secretary, who will also act as Secretary of the Finance Committee

The Finance Committee will call upon the various new secretaries to submit their estimates of expenditure. After examining these the Committee will frame the budget and will submit it to the Executive Committee for approval. After approval has been given by the Committee the budget will be passed at the Annual General Meeting of the Club

47 (vi) Should circumstances warrant it, the Executive Committee may make subsequent minor changes in the budget to guard against over expenditure

1 a function and not pay, but in cases where more than one member dissents, the case must be referred to the Principal whose decision shall be binding on the dissenting members

47 (xii). The cash from the regular subscriptions and billiards earnings shall be kept in the College Treasury. The amount accumulated from billiards will be earmarked for repairs and upkeep of the table and not used for any other purpose without the express sanction of the Principal. If money other than revenue is required for billiard table repairs, arrangements must be made in the following budgets to repay such money from revenue

The General Secretary will maintain an up-to date record of the total receipts and expenditure of the Club during his year of office

Expenditure from capital must in all cases be regarded as loan, and budget provision made for repayment from revenue. This repayment need not necessarily be made in the year. All expenditure from capital must have the sanction of the Principal

At the beginning of each month the secretaries of the various sections will hand their accounts, together with vouchers and bills, to the General Secretary, who will submit bills to the President after ascertaining that they are within the budget allotment. The President may either sign the pay order or delegate the power to the Vice President, and the General Secretary will the funds required from the treasury and the section secretaries concerned. V-P charges shall be paid in a similar manner, but must be paid as to

47 (xiii). The imprest of Rs 1000 will be

allowed an imprest of Rs 1000 to the Club. Such im-

the President is not presiding shall be reported by the officer presiding to the President for necessary action

The minutes of all general meetings (both annual and ordinary) shall be recorded by the General Secretary as soon as possible after the meetings and the same sent to the President for perusal

47 (viii) The quorum for either an annual, general or ordinary meeting shall consist of one third the number of active members of the Club, excepting when constitutional changes are to be discussed, when a quorum of at least two thirds of the number will be required.

47 (ix) The following subscriptions shall be paid in advance by each member of the Club and will be deposited in the College Treasury —

(a) A compulsory subscription of Rs 3 per mensem for each of the 9 months of each session from each Civil Engineer class student

(b) A compulsory entrance fee of Rs 10 from each Civil Engineer class student

(c) Honorary members, if resident in Roorkee, shall be required to pay a subscription of Rs 2 per mensem

47 (x) The Club premises shall only be used for entertainments or meetings of a general nature and only with the Principal's sanction

47 (xi) The Executive Committee may, provided a resolution has been passed at a general meeting, collect extra subscriptions to meet any proposed expenditure which must be for a general purpose not provided for in the ordinary yearly accounts. This may be collected through the College office and all members will have to pay the subscription. In special cases the President can allow a single member not to take part

in a function and not pay, but in cases where more than one member dissents, the case must be referred to the Principal whose decision shall be binding on the dissenting members

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At the beginning of each month the secretaries of the various sections will hand their accounts, together with vouchers and bills, to the General Secretary, who will submit bills to the President after ascertaining that they are within the budget allotment. The President may either sign the pay order or delegate the power to the Vice President, and the General Secretary will draw the funds required from the treasury and distribute to the section secretaries concerned. V-P charges will be dealt with in a similar manner, but must be paid as they arise

47 (xiii) The General Secretary shall be allowed an imprest of Rs 10 for petty expenses of the Club. Such imprest will be recouped as often as is necessary

47 (xiv) The General Secretary, with the assistance of the section secretaries, will prepare a detailed account of all expenditure and receipts each month. These accounts will be audited by the Finance Committee each quarter. The audit report will then be considered by the Executive Committee, and the audited accounts for the whole year placed before the Annual General Meeting of the Club.

The various secretaries shall also submit a detailed report of their work at this General Meeting.

47 (xv) The Club premises will usually be open from 10 a.m. to 9 p.m. in the first half session and from 10 a.m. to 10 p.m. in the second half session, but on Sundays and holidays the Club shall open from 8 a.m. and 7 a.m. respectively. On special occasions the Club premises may be kept open after the aforesaid hours provided the Executive Committee has previously obtained the sanction of the Principal through the President, unless he is the Principal, otherwise through the Vice-President. The Club premises will be closed during the College vacation and no member or honorary member shall have the right to use them during that period.

47 (xvi) Members are expected to use the Club property with great care and not to remove from the Club premises anything which is not their private property.

Any damage to Club property must be reported promptly to the Vice-President by the General Secretary. The member concerned shall pay for the damage such amount as is assessed by the Personal Assistant to the Principal upon intimation from the President or Vice-President after the approval of the Principal has been obtained.

An up-to-date inventory of all the Club property shall be kept with the General Secretary, and the departmental secre-

taries shall also keep a list of the property in their charge. Copies of these lists will be put up on the notice board for a week in the beginning of the session. The proposals for new purchases together with an estimate of the cost of same are to be submitted to the President through the Vice President for countersignature before any purchase is made. A list of all such proposed new purchases is to be exhibited on the notice board from time to time.

The secretaries should realize that they are servants of the Club and are not entitled to privileges other than those enjoyed by all the members of the Club. In no circumstances must they use any Club property for their own private use. Neither must Club servants be called upon to perform duties other than those connected with the Club. Any such *instances* brought to the notice of the President will be dealt with by him in consultation with the Executive Committee. In every case the action taken shall be reported to the Officer in charge, Civil Engineer class.

47 (xvii) A member may bring with him to the Club premises occasionally one or two gentlemen as his guests. He will be responsible for his guests while they are in the Club premises.

No guests will be allowed to be present at the General or Business meetings of the Club.

On the occasion of any Club function invitations shall be issued only by the General Secretary after the list of invitations has been approved by the President. Members desiring to invite any friends will send the names and addresses of these friends beforehand to the General Secretary who will submit all names to the President for approval.

47 (xviii) The Club establishment will be regulated and controlled by the General Secretary under the orders of the Executive Committee.

47 (xiv) The General Secretary, with the assistance of the section secretaries, will prepare a detailed account of all expenditure and receipts each month. These accounts will be audited by the Finance Committee each quarter. The audit report will then be considered by the Executive Committee, and the audited accounts for the whole year placed before the Annual General Meeting of the Club.

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Any damage to Club property must be reported promptly to the Vice-President by the General Secretary. The member concerned shall pay for the damage such amount as is assessed by the Personal Assistant to the Principal upon intimation from the President or Vice-President after the approval of the Principal has been obtained.

An up-to-date inventory of all the Club property shall be kept with the General Secretary, and the departmental secre-

47 (xii) Several indoor games can be played at present in the Club. Gambling is definitely prohibited in the Club premises.

47 (xiii) Badminton and tennis are the only outdoor games provided by the Club at present and for these no extra charge is made.

47 (xiv) Members will vote for the newspapers and periodicals which they desire for the Club on a list circulated by the News Secretary at the close of the College session. The proposed list shall then be submitted to the Executive Committee and forwarded by the Chairman of the Executive Committee to the President for approval. The order for foreign periodicals will be placed before the annual vacation begins.

At the beginning of the College session all papers selected by the Executive Committee will be auctioned to the member of the Club and the proceeds credited to the Club funds. The purchaser of any paper or periodical will receive the old copy of the same as soon as the new one arrives.

47 (xv) The constitution can be modified only once a year and only then provided 75 per cent of the quorum laid down in rule 47 (iii) vote in favour of the proposed changes. Before any such change can be discussed it shall be necessary for the General Secretary to give one month's notice to all members. For this it is also necessary to obtain the sanction of the Principal.

All correspondence including newspapers and periodicals meant for the Club shall be delivered to the General Secretary, who will dispose of them in the manner required by the rules.

47 (xvi) All members when attending the Club are requested to refrain from appearing in negligé dress and are to be neat and properly attired.

The Club premises will be properly looked after and kept clean and tidy under the supervision of the Garden and the General Secretaries. Anything in the nature of repairs being required will be reported to the Personal Assistant to the Principal.

The Personal Assistant to the Principal will report to the President any defect in cleanliness for necessary action.

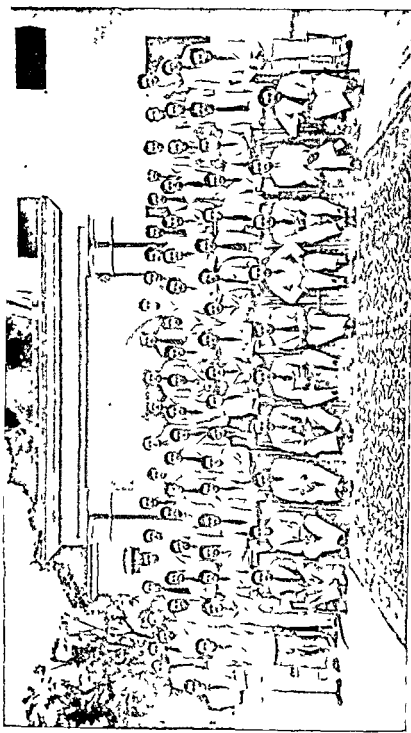
47 (xix) Instances of neglect or indiscipline on the part of any servant of the Club shall be brought at once to the notice of the General Secretary, who may recommend him to the President for such disciplinary measures as may be necessary.

47 (xx) During the absence of members on duty in camp one or more of the Club servants as may be decided by the Executive Committee may accompany them to be in charge of the refreshments and indoor games at the camp. If considered necessary by the Executive Committee temporary establishment may be engaged for the period of the camp, provided the budget allotment will cover the extra charge.

47 (xxi) The billiard table can be used by members on the payment of the following charges: Annas 2 per member for singles and anna 1 pie 6 per member for doubles per game lasting 25 minutes or part thereof, to be charged against those taking part in a game. These charges will be realized through the College office each month.

Any damage to the billiard table cloth shall be paid for at the minimum rate of Rs. 5 per inch. For the first cut the charge will be more, the amount of which will be fixed by the President.

Members are expected to abide by any other instructions regarding billiards issued by the Billiards Secretary, and approved by the President.

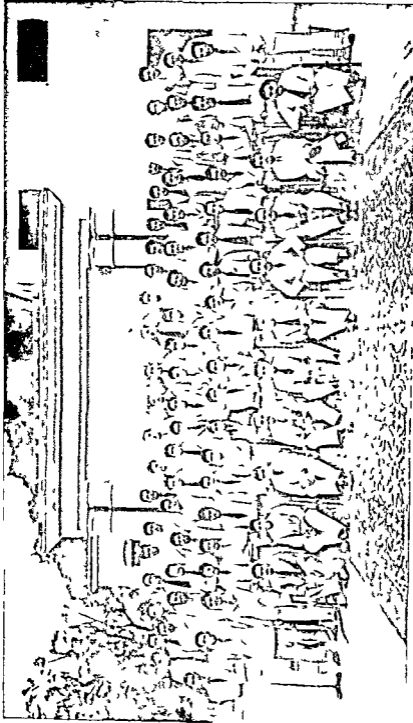


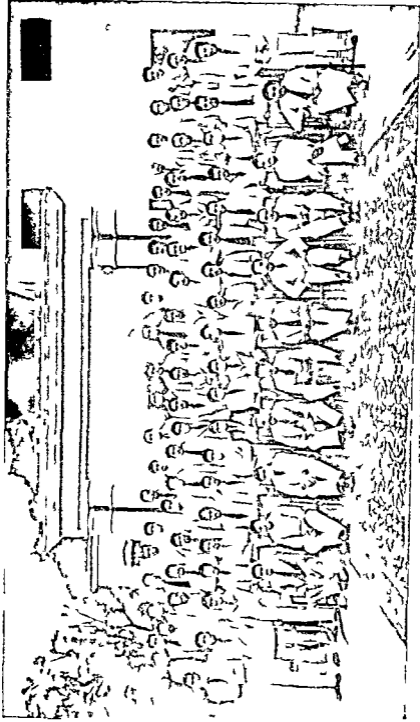
CIVIL ENGINEER CLASS MESS

1911

CIVIL ENGINEER CLASS MESS

1911





CIVIL ENGINEER CLASS NESS

The senior student of the two members elected from the 2nd year shall be the Honorary Secretary and the junior student the Assistant Secretary. The Mess Secretary is to occupy the Secretary's quarters attached to the mess building. It is compulsory for the students elected to serve.

The Mess Committee shall meet as often as the President may call.

48 (iii) Between the date the College reopens after the long vacation and October 31, of each year the President will call an annual general meeting of all members of the mess to elect the committee for the session and to consider any suggestions for improvements or alterations for the general welfare of the mess. Any such suggestions in writing, must be lodged with the Honorary Secretary at least 3 clear days before the date of the annual general meeting.

Annual
General and
other
meetings

No other general meeting is to be called except with the previous sanction of the President.

The Principal has the right to accept or vote all proposals, etc. passed at the annual general or any other general meeting or committee meeting.

All communications concerning the mess which are addressed to the Principal are to be sent to him through the President.

48 (iv) The rates of subscriptions shall be as follows —

Subscrip-
tions

(i) An entrance fee of Rs 2 per student upon first joining.

(ii) A monthly subscription of Re 1 8 per student per session.

(iii) The members of the mess will be required to pay Rs 20 as an advance money to effect cash pur-

The senior student of the two members elected from the 2nd year shall be the Honorary Secretary and the junior student the Assistant Secretary. The Mess Secretary is to occupy the Secretary's quarters attached to the mess building. It is compulsory for the students elected to serve.

The Mess Committee shall meet as often as the President may call.

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All communications concerning the mess, which are addressed to the Principal, are to be sent to him through the President.

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Subscrip-
tions

(i) An entrance fee of Rs 2 per student upon first joining

(ii) A monthly subscription of Re 1-8 per student per session

(iii) The members of the mess will be required to pay Rs 20 as an advance money to effect cash pur-

chases of food stuff for the mess. The advance will be adjusted at the end of the College Course or at any other time, if a member resigns.

The monthly messing charges will be worked out every month based on the actual expenditure incurred, and will thus vary every month. The approximate monthly amount will, however, be Rs 30 for the vegetarians and Rs 40 for the non vegetarians.

NOTE—All entrance fees, monthly subscriptions and messing charges will be collected as "College Dues".

48 (v) All members of the mess will be liable for their monthly subscription whether absent from the mess or not.

Members of the mess will be allowed a rebate from their monthly messing charges for —

(i) Whole days away on tour,

(ii) One whole day or more when away on sanctioned leave, i.e. leave sanctioned as per College Standing Orders.

But for those days for which this rebate is allowed a charge of annas four per day will be made for table money.

The rebate to be allowed will be as follows —

	Rs	s	p
(i) Vegetarians ..	1	0	0 per day
(ii) Non vegetarians	1	5	0 .. .

A book will be maintained in the mess and all members who wish to avail themselves of the concession of rebate on messing charges for any absence as noted above must sign this book 24 hours before they leave the College. Should they fail to do so for any reasons, whatsoever, full messing charges will

have to be paid. There will be no excuses accepted for an infringement of this rule. In the case of a whole class being away on tour or the whole three classes then the senior student in either case who is a member of the mess will be responsible for signing the book for all.

N B —Afternoon tea, as a compulsory item, will be dropped. Arrangements will, however, be made for those who wish to stick to this item, for which extra charges will be levied on them.

No rebate for a single meal will be allowed unless a member drops down a particular meal for more than 7 consecutive days from the date he informs the Honorary Secretary of his intention to do so. The rebate then will be worked as follows —

		Vegetarians		Non vegetarians	
		Rs	a	p	Rs a p
Dinner	..	0	5	6	0 7 6
Breakfast	..	0	2	9	0 3 9
Lunch	..	0	3	9	0 5 9

It will, however, not affect the payment of table money.

No member will be allowed to change from vegetarian or non vegetarian menu or *vice versa* during the middle of a month. He can do so in the beginning of a month by informing the Mess Secretary.

For meals on days of departure and return members will pay in addition to the table money charges, for each meal of which they partake at the following rates —

				Rs	a	p
(1) Vegetarians—						
(a) Breakfast	0 4	0
(b) Lunch	0 5	0
(c) Dinner	0 7	0

charges of food stuff for the mess The advance will be adjusted at the end of the College Course or at any other time, if a member resigns

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(ii) Non vegetarians	1 5 0 ..

A book will be maintained in the mess and all members who wish to avail themselves of the concession of rebate on messing charges for any absence as noted above must sign this book 24 hours before they leave the College Should they fail to do so for any reasons, whatsoever, full messing charges will

have to be paid. There will be no excuses accepted for an infringement of this rule. In the case of a whole class being away on tour or the whole three classes then the senior student in either case who is a member of the mess will be responsible for signing the book for all.

N B —Afternoon tea as a compulsory item, will be dropped. Arrangements will, however, be made for those who wish to stick to this item, for which extra charges will be levied on them.

No rebate for a single meal will be allowed unless a member drops down a particular meal for more than 7 consecutive days from the date he informs the Honorary Secretary of his intention to do so. The rebate then will be worked as follows —

		Vegetarians			Non vegetarians		
		Rs	a	p	Rs	a	p
Dinner	.	0	5	6	0	7	6
Breakfast	.	0	2	9	0	3	9
Lunch	..	0	3	9	0	5	9

It will however, not affect the payment of table money.

No member will be allowed to change from vegetarian or non vegetarian menu or *vice versa* during the middle of a month. He can do so in the beginning of a month by informing the Mess Secretary.

For meals on days of departure and return members will pay in addition to the table money charges, for each meal of which they partake at the following rates —

				Rs	a	p
(i) Vegetarians—						
(a) Breakfast				0	4	0
(b) Lunch	..	..		0	5	0
(c) Dinner	.	.	.	0	7	0

Rs a p.

(u) Non vegetarians—

(a) Breakfast ..	.	.	.. 0 7 0
(b) Lunch ..	..	..	.. 0 7 0
(c) Dinner ..	..	..	.. 0 9 0

Should a member be ill and confined to his quarters by the College Medical Officer, he may partake of his meals in his quarters but his own servants will bring the food from the mess. On no account will mess appointments, etc be allowed to be taken to a member's room in cases other than for illness.

Members are expected to be punctual at all meals. No responsibility can be assumed for the provision of meals out of regular hours except as provided for in clause 18.

48 (vi) No member may invite any guests to any meal without first entering in the guest book (which will be maintained in the mess for the purpose), notice of his intention at least 2 hours before the time the meal starts. Cancellation under 2 hours' notice will be accepted.

The rates for single meals for guests will be as under:—

Rs a p

(i) Vegetarians—

(a) Breakfast ..	..	..	.. 0 5 0
(b) Lunch .	..	..	.. 0 7 0
(c) Tea ..	..	..	.. 0 4 6
(d) Dinner .	..	..	.. 0 8 0

(u) Non vegetarians—

(a) Breakfast ..	..	..	.. 0 0 0
(b) Lunch ..	..	..	.. 0 8 0
(c) Tea .	..	.	.. 0 4 6
(d) Dinner .	..	..	.. 0 11 0

The rates for the whole day messing for guests will be as under

	Rs	a	p
(i) Vegetarians	..	1	2 0
(ii) Non vegetarians		1	7 0

48 (vii) No invitations in the name of the mess shall be given to any individual or party without the consent of the President and if consent be given, all members will bear a proportion of the cost, whether absent or not

General
invitations.

48 (viii) All property, furniture, appointments, etc in the mess is as far as the mess is concerned the property of the Thomason College of Civil Engineering and no individual member has any share in it whatsoever

Mess
property.

All damage done by members whether accidentally or not will be paid for by the members causing such damage and such members will sign a chit for any such damage, voluntarily

The right to lend any of the mess property, servants, etc for any College functions, teas, etc is vested solely in the President. The mess property and appointments are now in any case to be lent to any private individual or individuals whether belonging to the College or not

48 (ix) It is the duty of the Secretary in conjunction with the President to prepare the menu for the ensuing week and to see that the food supplied cooked or uncooked is of the best quality. The Secretary will bring complaints to the notice of the President. The mess servants are under the direct control of the President.

Secretary's
duties

48 (x) The Mess Secretary will arrange messing in camp for those members of the mess who have to go to the 2nd year survey camp or to 3rd year minor or major project camps

Camp
messing

48 (xxiv) No concert parties or other kinds of entertainments will be allowed in the mess building. These entertainments when sanctioned are to be held in the C E Students' Club.

Rules of the Overseer Class Club.

49 (i) All students of the Overseer Class have to be members of the Club, and they shall abide by the rules and regulations in force. A breach of the rules or conduct unbecoming a member of the Club will debar him from the enjoyment of the Club privileges to the extent approved by the President on the recommendation of the Club Secretary.

49 (ii) The Principal will be the patron of the Club and the Head Master will be the President of the Club.

The Vice President will be the senior student of the 2nd year, who will also be one of the six members of the Executive Committee.

The President will be assisted in the management of the Club by a committee composed of five members. Five of these will be elected at a general meeting of the Club in the following manner:—

- | | |
|---------------------------|---|
| (a) Club Secretary, | } Will be in charge of various outdoor games connected with the Club. |
| (b) Tennis Secretary, | |
| (c) Hockey Secretary, | |
| (d) Football Secretary, | |
| (e) Volleyball Secretary, | |

Disciplinary and financial control will be exercised by the Head Master, Overseer Class.

49 (iii) (a) Each student of the Overseer class will pay compulsorily, Rs 5 per mensem for each of the 9 months of

each session for Club Recreation and Boating of which Rs 5 will be credited to the Club and Recreation Fund and Rs 2 to the Boating Fund

(b) Each will pay compulsorily an entrance fee of Rs 3 upon first joining the College, the whole of which will be credited to the Club and Recreation Fund

Annual Regatta Rules

50 (i) *President*—The Principal will appoint a member of the College Staff as President of the Regatta Committee

The President will choose his own Committee

50 (ii) *Date*—The Annual Regatta will be held early in June on a date fixed by the Principal on the recommendation of the President

The Annual Regatta is open to such students of both Civil Engineer and Overseer classes as have passed both the swimming and rowing tests

Heats for the various events of the Regatta will take place on dates to be notified by the President

50 (iii) *Entries and Entrance fee*—All entries will close at noon on a date to be notified by the President

The entrance fees will be 8 annas for entrants per challenge event excluding the coxswains

50 (iv) *Events*—The Regatta events will be as follows —

- (1) Challenge Single Sculls
- (2) Challenge Double Sculls
- (3) Challenge Pair Oars
- (4) Challenge Fours
- (5) (a) Swimming Race }
 (b) Pontoon Race } For Indian garrison
- (6) Greasy Pole (Open to public)

50 (v) *Course*—All events will be rowed on the Ganges Canal downstream. The finishing point will be about 300 yards above the Ganeshpur bridge. The length of the course will be as follows.—

For events 1, 2 and 3— $\frac{1}{2}$ mile.

For event 4— $\frac{3}{4}$ mile

50 (vi) *Substitutes*—One substitute will be allowed to row in a four to replace a man who is unfit provided that the substitute is eligible and his name has not been entered in any other crew in that event. The name of the substitute need not be submitted.

No substitute will be allowed in half mile races.

50 (vii) *Events 1, 2, 3 and 4 are open to students of both the Civil Engineer and Overseer classes, but the crews and cox are to be either all Civil Engineer class students or all Overseer class students. A Civil Engineer class crew and cox may consist of a crew and cox drawn from all 3 years and similarly an Overseer class crew and cox may consist of a crew drawn from both years. There is no special race in which crews from any particular year compete against another such crew.*

50 (viii) *Punctuality*—Heats will be started punctually at the time fixed. Competitors should arrive at the starting point 10 minutes before the time in order to adjust stretchers and straps, etc. Any crew not found ready at the time fixed for the start is liable to be disqualified.

50 (ix) *Disqualification*—(a) Any crew causing delay at the start by inability to turn and manoeuvre their boat as ordered by the starter will be disqualified.

(b) Any crew fouling another crew during the race by touching with their oars or boat the oars or boat of the other crew when in the latter crew's water will be disqualified.

No crew is permitted to take its opponent's water unless it is leading by two lengths and on the approach of the other it must give way and retire to its own water.

50 (A) *General*—A boat is never to be brought into the bank or taken out from the bank unless the boat is pointing upstream. Thus a boat must always be turned round after a race before approaching the bank.

50 (XI) *Prize distribution*—The prize distribution will take place soon after the last race is rowed. Prizes will be awarded for events 1, 2, 3 and 4 and also for boating (best oar in Civil Engineer Class 3rd year or Overseer Class 2nd year). The prizes for the events 5 and 6 will not be awarded but will be sent over to Adjutant K G O Bengal Sappers and Miners to be given to the winners by the Commandant.

Boating and Swimming Rules

51 (i) These events will be in charge of a member of the staff who will be appointed by the Principal each year and who will be known as Officer in charge Boating.

51 (ii) The duties of Officer in charge Boating will be as follows —

- (a) To arrange for the swimming tests in consultation with the President Recreation on or about November 15, April 1 and July 1 each session and to maintain a record of the results of these tests.
- (b) To arrange and supervise the coaching in rowing of such students as have passed the swimming test and also to arrange for the rowing test.
- (c) To arrange to store up all boats by June 30, and report to President Recreation his having done so.

To inspect the boats from time to time and report the result of these inspections

- (d) To report to President Recreation by January 31 each year the condition of each boat and submit an estimate for the cost of repair, varnishing etc and to see that repairs etc are completed by March 15 at the latest
- (e) To submit to President Recreation by May 31 his proposals if any, for the replacement of old boats by new
- (f) To maintain a log book of boats giving the following inventories —
 - (i) number and description of each boat and its equipment,
 - (ii) year of its purchase or building and the purchase price (together with freight etc) or cost of build
 - (iii) cost of repairs (including varnishing) executed during the College session, together with dates of execution

51 (iii) *Swimming*—All students of the Civil Engineer and Overseer classes are required to pass the swimming test before they can be permitted to take up rowing

Students who wish to learn to swim must begin their lessons in Amber Talab (or in the College Swimming Tank when it is completed) and not in the main canal. Such students will take their lessons only at times arranged by Officer-in-charge of Boating who will see that the Boatman is present at these lessons

Students will not be allowed to enter the boats or bathe in the main canal till they have qualified in swimming

The swimming tests will be held each year on or about November 15 April 1 and July 1 The test shall consist of swimming half way across the canal and back and will take place downstream of Solani Aqueduct

Maximum marks allotted for the test are —

For Civil Engineer Class students—30

For Over eer Class students—20

51 (iv) *Rowing*—The rowing test will be held in the last week of April

To pass the test a student must be able to handle the oars properly should be able to backwater with either or both hands and should be able to turn the boat in any direction

No marks will be allotted for this test

Only such students as have passed this test will be allowed to enter the Regatta

51 (v) *Boating*—Boating season will be from the beginning of April to first week in June during which the finale of Annual Regatta will be held

Boating is only allowed in the reach of the canal between the brick lions below the Roorkee city bridge and the Ganeshpur bridge

No students will be permitted to take out boats before April 1

To encourage rowing the boating season may be extended till the end of June

Students will not be permitted to take out boats after June 30

Special Rules.

52 (i) All European students are expected to attend Divine Service once every Sunday at their own place of worship.

52 (ii). Indian students of Overseer and Draftsman classes, as well as those of the Civil Engineer Class, who do not join the common mess will make their own arrangements for messing.

53. Students, whether European or Indian, of the Overseer and Draftsman classes will make their own arrangements for messing.

54. Students, whether European or Indian, of the Civil Engineer Class will make their own arrangements for messing unless they join the Common Civil Engineering Class Mess.

YEARLY LISTS OF STUDENTS, WHO HAVE PASSED
OUT OF THE COLLEGE FROM 1938 INCLUSIVE
(FOR LISTS DATING BACK TO 1933 INCLUSIVE
SEE CALENDAR FOR 1937-38 FOR LISTS DAT-
ING BACK TO 1928 INCLUSIVE SEE CALENDAR
FOR 1932. FOR LISTS DATING BACK TO 1910
INCLUSIVE SEE CALENDAR FOR 1928), AND FOR
LISTS TO 1848 SEE CALENDAR FOR 1910

1928

No	Names	Where educated	Marks gained	Per cent	Remarks
CIVIL ENGINEER CLASS THIRD YEAR (Full marks—8090)					
1	Jagdish Sharan Jain	S. D. College, Lahore	6341	78	Honours Diploma as Civil Engineer Council of India Prize of Rs 1000 for General Proficiency Cuttley Memorial Gold Medal for Mathematics Group II General Maclean's Prize of books for Electrical Engineering and Physics Silver Medal for Civil Engineering (Theoretical) Drawing and Mechanical Engineering
2	Nirmalendu Bhushan Banerji	College of Science University of Allahabad	6122	76	Honours Diploma as Civil Engineer Thomason Prize of Rs.250 for the most distinguished student, who obtains the Honours Diploma, but does not gain the Council of India Prize Sushila and J. Mitra Memorial Silver Medal for Indian student who obtains highest marks in Chemistry
3	Sher Bahadur	Bareilly College, Bareilly	6026	74	Honours Diploma as Civil Engineer Raj Bahadur Kanhaiya Lal Gold Medal for the most distinguished student who does not obtain the Council of India Prize or Thomason Memorial Prize Calcott Reilly Memorial Gold Medal for Applied Mechanics Silver Medal for Surveying

1938

No	Names	Where educated	Marks gained	Per cent	Remarks
4	Stanislaus Francis Braganza	St Joseph's College, Naini Tal	5899	73	Honours Diploma as Civil Engineer. The Puran Mal Silver Medal for Public Health Engineering
5	Gulzar Singh Sidhu,	Mohindra College, Patiala	5912	72	Honours Diploma as Civil Engineer
6	Prahlad Das	University of Allahabad	5714	71	Honours Diploma as Civil Engineer Thomason Memorial Gold Medal and books worth Rs 25 for the best Engineering designs (projects).
7	Bakhshi Madan Mohan Anand	Hindu Sabha College, Amrit- sar	5583	69	Honours Diploma as Civil Engineer.
8	Rameshwar Lal Agrawal	Government Inter- mediate College, Morenabad	5547	69	
9	Edmund Phillip	St Xavier's College, Calcutta	5341	66	
10	Kartik Prasad	University of Allahabad	5181	64	Ordinary Diploma as Civil Engineer. Silver Medal for Laboratory Practice Group IV (Practical)
11	D. N. Kochhar	Murray College, Sivkrot	5142	64	Ordinary Diploma as Civil Engineer.
12	Nawal Kishore Mehra	Government College, Ajmer	5018	62	
13	Gurdial Singh Berar.	Ewing Christian College, Allah abad	4964	61	
14	Avinash Chandra Mathur	Government Intermediate College, Allah abad	4893	60	

1938

No	Names	Where educated	Marks gained	Per cent.	Remarks
15	Hari Krishna Das Capoor	Ewing Christian College, Allah abad	4796	59	} Ordinary Diploma as Civil Engineer
16	Krishan Raj Mehndi Ratta	Forman Christian College, Lahore	4668	58	
17	Mudan Gopal	D A V College, Lahore	4547	56	
18	Kameshwar Sinha Bhatnagar	Herbert College Kotah	4444	55	
(Full Marks — 7500)					
	Lieutenant N S Bhagat	Indian Military Academy, Dehra Dun	5076	68	} Honours Diploma as Civil Engineer
	Lieutenant Anant Singh	Ditto	5016	67	
	Lieutenant A N Ka hiap	Ditto	4453	59	Ordinary Diploma as Civil Engineer

1933

No	Names	Where educated	Marks gained	Per cent	Remarks
OVERSEER CLASS, SECOND YEAR (Full marks—4200)					
1	Namshwar Prasad Jain	D A V Inter Col lege Dehra Dun	3279	78	Higher Certificate as Overseer Sil ver Medal and Rs 100 for Gene ral Merit Rai Bahadur Kanhaiya Lal Silver Medal for best Indian student, who stands first in the class The Durga Dass Dutt Silver Medal for best Indian student, obtaining Higher certificate Sullivan Memorial Silver Medal for Mechanics Key Memorial Silver Medal and Rs 18 for estimating Silver Medals for Descriptive En gineering Work shops Group V, and Project The Puran Mal Silver Medal for Public Health Engineering.
2	Sattya Narain Gupta	Government Inter College, Etawah	3125	74	Higher Certificate as Overseer Rai Bahadur Kanhaiya Lal Silver Medal for Indian student who stands second in the class Silver Medals for Mathematics (Ele mentary) and Surveying
3	Jai Bhagwan Gupta	Hindu A N High School, Gangohi	3003	72	Higher Certificate as Overseer Fairley Memorial Silver Medal for Applied Mechanics

1938

No.	Names	Where educated	Marks gained	Per cent.	Remarks
15	Hari Krishna Das Capoor,	Ewing Christian College, Allah abad.	4796	59	} Ordinary Diploma as Civil Engineer
16	Krishan Raj Mehndi Ratta	Forman Christian College, Lahore	4668	58	
17	Madan Gopal ..	D A V College, Lahore	4547	56	
18	Kameshwar Singh Bhatnagar.	Herbert College, Kotah.	4444	53	
(Full Marks,—7500)					
	Lieutenant N. S Bhagat	Indian Military Academy, Dehra Dun	5076	68	} Honours Diploma as Civil Engineer.
	Lieutenant Anant Singh	Ditto ..	5016	67	
	Lieutenant A N Kashyap	Ditto ..	4453	59	Ordinary Diploma as Civil Engineer.

1933

No	Names	Where educated	Marks gained	Per cent	Remarks
OVERSEER CLASS, SECOND YEAR (Full marks—4200)					
1	Nameshwar Prasad Jain	D A V Inter Col lege, Dehra Dun	3279	78	Higher Certificate as Overseer Sil ver Medal and Rs 100 for Gene ral Merit Rai Bahadur Kanhaiya Lal Silver Medal for best Indian student, who stands first in the class The Durga Dass Dutt Silver Medal for best Indian student, obtaining Higher certificate Sullivan Memorial Silver Medal for Mechanics Keay Memorial Silver Medal and Rs 18 for estimating Silver Medals for Descriptive En gineering Work shops Group V. and Project The Puran Mal Silver Medal for Public Health Engineering.
2	Sattya Narain Gupta	Government Inter College Etawah	3125	74	Higher Certificate as Overseer Rai Bahadur Kanhaiya Lal Silver Medal for Indian student who stands second in the class Silver Medals for Mathematics (Ele mentary) and Surveying
3	Jai Bhagwan Gupta	Hindu A N High School, Gangoh	3003	72	Higher Certificate as Overseer Fairley Memorial Silver Medal for Applied Mechanics

1938

No	Names	Where educated	Marks gained	Per cent	Remarks
4	Raj Kumar Mishra	D A -V. College, Cawnpore	2878	60	Higher Certificate as Overseer
5	Malkhan Singh	D J High School, Baraut	2837	68	
6	Har Narayan Maheshwari	Government High School Amroha	2712	65	
7	Basdeo Sharma	N R E C Inter College, Khurja	2705	64	
8	Dhan Lal Sah	Government High School, Naini Tal	2698	64	Higher Certificate as Overseer Silver Medal for Accounts
9	Kailash Chandra	Hindu City Col lege, Jubbulpore	2697	64	
10	Anand Prakash	Government High School, Muzaffar nagar	2696	64	Higher Certificate as Overseer
11	Mahabir Prasad Jain	Meerut College Meerut	2661	63	
12	Har Swarup Gupta	K P Inter College, Allahabad	2591	62	Ordinary Certificate as Overseer
13	Roshan Lal	B N S D Inter College, Cawnpore	2554	61	Higher Certificate as Overseer
14	Shiva Charan Lal	D S Inter College, Aligarh	2527	60	
15	Bisheshwar Dyal Agar wal	Thomason College, Roorkee	2510	60	Ordinary Certificate as Overseer
16	Mahendra Singh Gill	Government C O High School Roor kee	2507	60	
17	Kailash Chandra Goyal	Meerut College, Meerut	2456	58	
18	Shree Charan Dass Sharma	Ditto	2448	58	

1978

No	Names	Where educated	Mat ^r R ^o d	Per cent	Remarks
19	Ved Prakash Garg	Government H gl School B inor	438	55	Ord nary Certificate as Over eer
20	Berni Mohan Sunla	Anglo Bengal Inter College Allal abad	411	55	Ord nary Certificate as Overseer Silver Medal for Drawing
21	Bal kishwar Prasad Garg	Christ ian Inter College Lucknow	39	57	
22	Hasan Ashari	Government H gl School Saharanpur	379	57	
23	Mittar Sen Garg	Government H gl School Poorkee	388	57	
24	Krishna Saroop	Bareilly College Bareilly	368	60	
25	Sewa Ram	Government High School Muzaffarnagar	360	56	
26	Satya Prakash Gupta	Government C O H gl School, Roorkhee	359	56	
27	Jugminder Dass	D J an H gl School Baraut	343	60	Ord nary Certificate as Overseer
28	Om Prakash Gupta	Meerut College Meerut	83	54	
29	Atma Ram Gupta	Ditto	41	53	
30	Jagdish Prakash	Ditto	05	53	
31	Shiva Raj Singh	D N H gl School Meerut	180	53	
32	Narain Behar Mathur	Government Inter College Allahabad	16	53	
33	Shyam Sunil	D A V H gl School Muzaffarnagar	159	51	
34	Balambhar Salga Gool	Government H gl School Hapur	151	51	
35	Om Prakash Goyal	N A S H gl School Meerut	100	50	
	Manak Chand Mehra	Government High School Ajmer	195	50	

1938

No	Names	Where educated	Marks gained	Per cent	Remarks
4	Raj Kumar Mishra	D A V. College, Cawnpore	2878	69	Higher Certificate as Overseer
5	Malkhan Singh	D J High School, Baraut	2837	68	
6	Har Narayan Maheshwari	Government High School, Amroha	2712	65	
7	Basdeo Sharma	N R E C Inter College, Khurja	2705	64	
8	Dhan Lal Sah	Government High School, Naini Tal	2698	64	Higher Certificate as Overseer Silver Medal for Accounts
9	Kailash Chandra	Hitharini City Col- lege, Jubbulpore	2697	64	
10	Anand Prakash	Government High School, Muzaffar nagar	2696	64	Higher Certificate as Overseer
11	Mahabir Prasad Jain	Meerut College, Meerut	2661	63	
12	Har Swarup Gupta	K P Inter College, Allahabad	2501	62	Ordinary Certificate as Overseer
13	Roshan Lal	B N S D Inter College, Cawnpore	2554	61	Higher Certificate as Overseer
14	Shiva Charan Lal	D S Inter College Aligarh	2527	60	
15	Bisheshwar Dajal Agar- wal	Thomasor College, Roorkee	2510	60	Ordinary Certificate as Overseer
16	Mahendra Singh Gill	Government C O High School, Roor- kee	2507	60	
17	Kailash Chandra Goyal	Meerut College, Meerut	2456	59	
18	Shiva Charan Das Sharma	Ditto	2418	58	

1978

No	Names	Where educated	Marks gained	Per cent.	Remarks
19	Ved Prakash Garg	Government High School Bijnor	2438	58	Ordinary Certificate as Overseer
20	Benu Mohan Singh	Anglo Bengali Inter College, Allahabad	2411	57	Ordinary Certificate as Overseer Silver Medal for Drawing
21	Bisheshwar Prasad Garg	Christian Inter Col lege, Lucknow	2397	57	Ordinary Certificate as Overseer
22	Hasan Askari	Government High School, Saharan pur	2379	57	
23	Mittar Sen Garg	Government High School Roorkee	2378	57	
24	Krishna Saroop	Bareilly College Bareilly	2368	56	
25	Sewa Ram	Government High School Muzaffar nagar	2360	56	
26	Satya Prakash Gupta	Government C O High School, Roor kee	2359	56	
27	Jugminder Dass	D Jain High School Baraut	2343	56	
28	Om Prakash Gupta	Meerut College Meerut	2283	54	
29	Atma Ram Gupta	Ditto	2241	53	
30	Jagdish Prakash	Ditto	2205	53	
31	Shiva Paj Singh	D N High School Meerut	2180	52	
32	Nart Behari Mathur	Government Inter College Allahabad	2167	52	
33	Shyam Sundar	D A V High School Muzaffarnagar	2159	51	
34	Bishambhar Sahai Goel	Government High School Hapur	2151	51	
35	Om Prakash Goyal	N A S High School Meerut	2100	50	
	Manak Chand Mehra	Government High School Ajmer	2195	52	

1938

No	Names of students	Remarks
DRAFTSMAN CLASS THIRD YEAR		
1	Jwala Das J Mathur	Certificate as Draftsman in 2nd division Silver Medal and Rs 30 for General Merit and Best Draftsman Qualified in Estimating
2	Brahma Shanker Bhatnagar	Certificate as Draftsman in 2nd division Silver Medal and Rs 20 for Second Best Draftsman Qualified in Estimating
3	Satya Prakash	Certificate as Draftsman in 2nd division Qualified in Estimating
4	Ajit Chandra Bose	Certificate as Draftsman in 2nd division Qualified in Estimating

1939

No	Names	Where educated	Marks gained	Per cent	Remarks
CIVIL ENGINEER CLASS, THIRD YEAR (Full marks—7900)					
1	Akhtarul Islam Khan	Bareilly College Bareilly	5933	73	Honours Diploma as Civil Engineer Council of India Prize of Rs 1 000 for General Proficiency Silver Medals for Civil Engineering (Theoretical) and Surveying
2	Shri Krishna Agrawala	University of Allahabad	678	71	Honours Diploma as Civil Engineer Thomason Prize of Rs 250 for the most distinguished student who obtains the Honours Diploma but does not gain the Council of India Prize Thomason Memorial Gold Medal and books worth Rs 25 for best Engineering Designs
3	Mahabir Prasad Jain	D A V College Cawnpore	5 01	6	Honours Diploma as Civil Engineer Rai Bahadur Kanhaiya Lal Gold Medal for the most distinguished Indian student who does not obtain the Council of India or Thomason Memorial Prizes
4	R L Kaushal	Government College Lahore	5404	68	Honours Diploma as Civil Engineer
5	Ashoke Kumar Gupta	LaMartiniere College Lucknow	540	68	Honours Diploma as Civil Engineer Silver Medal for Drawing The Puran Mal Silver Medal for Public Health Engineering

1939

No	Names	Where educated	Marks gained	Per cent	Remarks
6	Virendra Nath Srivastava	University of Allahabad	355	67	Honours Diploma as Civil Engineer
7	Dabi Saran Sinha	Queen's College Benares	236	66	Ordinary Diploma as Civil Engineer Cautley Memorial Gold Medal for Mathematics (Group II) Calcott Reilly Memorial Gold Medal for Applied Mechanics General MacLagan's Prize of books for Electrical Engineering and Physics Silver Medal for Mechanical Engineering Sushila and J. Mitra Memorial Silver Medal for Indian student who obtains highest marks in Chemistry
8	Jewal Krishan	Government College Ludhiana	225	65	Ordinary Diploma as Civil Engineer
9	Naresh Chandra Saksena	D. A. V. Intermediate College Dehra Dun	226	66	Ordinary Diploma as Civil Engineer Silver Medal for Laboratory Practice (Group IV) Practical
11	Roshan Lall Aggarwal	D. A. V. College Lahore	204	64	Ordinary Diploma as Civil Engineer
12	Abdul Hamid	Meerut College, Meerut	198	61	
13	Parashottam Singh	Lucknow University Lucknow	162	61	
14	Partul Chandra Ahirna	Government College Lahore	112	61	

1939

No	Names	Where educated	Marks gained	Per cent	Remarks	
15	Bhupendra Sarup Johri	University of Allahabad	4408	50	} Ordinary Diploma as Civil Engineer	
16	Harish Chandra Goel	D A V Intermediate College Dehra Dun	4407	50		
17	Darshan Lal Gupta	Hindu University Engineering College, Benares	4353	54		
18	Jassa Singh	Agra College, Agra	4225	53		
19	Amarnath Sud	Sanatam Dharam College, Lahore	4084	51		
20	Bhim San Aggarwal	Gordon College Rawalpindi	4195	51	} After ignoring equitation test in his case Vide Government Order United Provinces, Education Department no 3332/XV—80739 dated the 22nd December, 1939	
21	S Anzar Ahmad Naqvi	University of Allahabad	3955	51		
	Bishambhar Dayal Gaur	Jaswant College Jodhpur	4276	64		Ordinary Diploma as Civil Engineer
	(Full marks—6350)					
	Lieut Jogendra Singh Dhillon	Indian Military Academy Dehra Dun	4161	60		} Honours Diploma as Civil Engineer
	Lieut Amar Datt	Ditto	4160	60		
	Lieut M Anwar Khan	Ditto	4136	60		

1939

No	Names	Where educated	Marks gained	Per cent.	Remarks
OVERSEER CLASS, SECOND YEAR (Full marks—4200)					
1	Jitendra Kumar Mital	Meerut College, Meerut.	3181	76	Higher Certificate as Overseer Silver Medal and Rs 100 for General Merit Rai Bahadur Kanhaya Lal Silver Medal for best Ind an student who stands 1st in the class The Durga Dass Dutt Silver Medal for best Indian student obtaining Higher Certi- ficate Silver Medals for Surveying, Drawing Workshops (Group V), and Pro- ject
2	Hailash Chandra Jain	Meerut College, Meerut	3059	73	Higher Certificate as Overseer Rai Bahadur Kanhaya Lal Silver Me- dal for Indian student who stands 2nd in the class Silver Medal for Mathematics (Ele- mentary) Fairley Memorial Silver Medal for Applied Mechanics Sullivan Memorial Silver Medal for Me- chanics
3	Tara Chand	N R E C College, Khurja	2998	71	Higher Certificate as Overseer Silver Medal for Descriptive Engi- neering and Accounts
4	Jai Prakash	Meerut College, Meerut	2979	71	Higher Certificate as Overseer Kavya Mo- norial Silver Medal and Rs 18 for Esti- mating
5	Prem Narain Tayal	Government Inter- mediate College, Allahabad	2920	7	Higher Certificate as Overseer

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No	Names	Where educated	Marks out of 100	Per cent	Remarks
6	Hari Krishna Gupta	P B V S High School Hatiras	85	85	Higher Certificate as Overseer Silver Medal for Accounts
7	Narajan Lal Sharma	D N High School Meerut	79	79	
8	Dev Shankar Varma	A V High School Anupshahr	46	46	
9	Brij Bhishan Lal	Government High School Muzaffar nagar	20	65	Higher Certificate as Overseer
10	Raghuraj Singh	Uday Pratap Col lege Benares	69	69	
11	Om Prakash	D A V High School Muzaffar nagar	69	69	
12	Kailash Chand	Meerut College Meerut	68	68	Higher Certificate as Overseer The Puran Mal Silver Medal for Public Health En gineering
13	Jai Prakash Goel	Meerut College Meerut	50	50	
14	Om Prakash Kansal	Ditto	67	67	
15	Bal Krishan	D N High School Meerut	67	67	Higher Certificate as Overseer
16	Hari Chandra Gupta	G C O High School Roorkee	64	64	
17	Gulzari Lal Goel	Kashi Ram High School Balarampur	65	65	
18	Satya Prakash Mastel	Meerut College Meerut	63	63	
19	Ram Prasad Gupta	S D High School Etawal	63	63	
20	Kailash Chandra	Government Inter mediate College Moradabad	59	59	
21	Ranbir Singh	Meerut College Meerut	50	50	

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No.	Names	Where educated	Marks (out of 100)	Per cent	Remarks
22	Om Prakash Gupta,	D. S. Intermediate College, Aligarh	2580	61	Higher Certificate as Overseer.
23	Shiva Kumar Sharma.	Government High School, Muzaffarnagar.	2575	61	Ordinary Certificate as Overseer.
24	Jagdish Saran Gupta.	Government Intermediate College, Moradabad.	2567	61	Higher Certificate as Overseer.
25	Sia Ram Sharma	Government C. O. High School, Roorkee.	2553	61	
26	Shyam Lal ..	Meerut College, Meerut	2543	61	
27	Rameshwar Das	H. A.-V. High School, Deoband.	2541	60	
28	Chander Sen ..	Kashi Ram High School, Saharanpur.	2530	60	
29	Om Prakash Gupta.	K. E. M. U. J. Intermediate College, Lakhaoti.	2520	60	Ordinary Certificate as Overseer.
30	Dhaneshwar Rastogi.	Meerut College, Meerut.	2500	60	
31	Mitra Sen ..	B. N. S. D. Intermediate College, Cawnpore.	2491	59	
32	Om Prakash Jain.	Government C. O. High School, Roorkee	2485	59	
33	Bhawani Prasad Goel.	Jat Intermediate College, Lakhaoti.	2477	59	
34	Jayanti Prasad Goyal.	N. R. E. C. College, Khurja.	2465	59	
35	Prakash Chander Jain.	Denney's High School, Rawalpindi.	2437	58	

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No	Names	Where educated	Marks gained	Per cent.	Remarks
36	Mukhtar Singh Ikhtar	J V High School, Baraut	2434	58	Ordinary Certificate as Overseer.
37	Malleshwar Prasad Srivas tava	D A V. High School Cawnpore	2432	58	
38	Padam Prasad Jain	D N High School, Meerut.	2362	56	
39	Hukam Chand Jain	K. R High School, Saharanpur.	2349	56	
40	Brij Gopal	Government C O High School, Roorkee.	2324	55	
41	Jagdish Prasad Agarwala	D A V Inter mediate College, Dehra Dun.	2305	55	
42	Jodh Singh Negi	Ditto ..	2298	55	
43	Sayid Riazul Hasan Burney.	Muslim Univer sity, Aligarh.	2284	54	
44	Muhammad Wasim Qureshi	Jubilee Inter mediate College, Lucknow.	2100	50	

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No.	Names of students	Remarks
DRAFTSMAN CLASS, THIRD YEAR		
1	Anand Singh Bisht .	Certificate as Draftsman in 1st division. Silver Medal and Rs 30 for Best Draftsman. Qualified in Estimating
2	Tirloki Nath ..	Certificate as Draftsman in 1st division. Silver Medal and Rs 20 for 2nd Best Draftsman. Qualified in Estimating
3	Raghubir Sharan .	} Certificate as Draftsman in 2nd division. Qualified in Estimating.
4	Shyam Sundar Misra .	
5	M. Hamid Khan ..	Certificate as Draftsman in 3rd division. Qualified in Estimating.

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No	Names	Where educated	Marks passed	Per cent	Remarks
CIVIL ENGINEER CLASS, THIRD YEAR (full marks—6990)					
1	Ramesh Chandra Agrawala	Meerut College, Meerut	5215	75	Honours Diploma as Civil Engineer Council of India Prize of Rs 1,000 for General Proficiency Calcott Reilly Memorial Gold Medal for Applied Mechanics Silver Medals for Civil Engineering (Theoretical) and Mechanical Engineering
2	Ravi Datta	Meerut College, Meerut.	5183	74	Honours Diploma as Civil Engineer Thomason Prize of Rs 25 for the most distinguished student who obtains the Honours Diploma, but does not gain the Council of India Prize Silver Medal for Surveying Sushila and J Mitra Memorial Silver Medal for Indian student who obtains highest marks in Chemistry
3	Gangeshwar Dayal Mathur	Meerut College, Meerut	5169	74	Honours Diploma as Civil Engineer Rai Bahadur Kanha Lal Gold Medal for the most distinguished Indian student who does not obtain Council of India or Thomason Memorial prizes Cautley Memorial Gold Medal for Mathematics (Group II) Silver medal for Drawing

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No.	Names	Where educated	Marks gained	Per cent	Remarks
CIVIL ENGINEER CLASS, THIRD YEAR—(contd)					
4	Kali Charan, B.Sc.	University of Allah abad.	5952	72	Honours Diploma as Civil Engineer Tho- mason Memorial Gold Medal and books worth Rs 25 for best Engineering Designs General MacLagan's Prize of Books for Electrical Engineering and Physics Silver Medal for Labora- tory Practice, Group IV (Practical)
5	Lakshmi Chand Agrawal.	Government Inter- mediate College, Etawah	4979	71	Honours Diploma as Civil Engineer.
6	Shri Kant Gupta.	Ditto ..	4927	70	Honours Diploma as Civil Engineer The Puran Mal Silver Medal for Public Health Engineering
7	Gauri Narayan Dikshit, B.Sc.	University of Allah abad.	4722	68	Honours Diploma as Civil Engineer.
8	Abdur Rashid	Government College, Lahore	4711	67	
9	Satinder Nath Gupta.	Ditto .	4660	67	
10	Arya Bhushan, B.Sc.	Allahabad Univer- sity, Allahabad	4619	66	
11	Hari Krishna	University of Allah abad	4579	66	Ordinary Diploma as Civil Engineer.
12	Kailash Chandra Goyal.	Meerut College, Meerut.	4544	65	
13	Bhola Nath Vaish, B.Sc.	Ditto ..	4530	65	
14	Bhagwat Pra- sad	Bareilly College, Bareilly.	4521	65	
15	Phul Prakash Gupta	D. S. Intermediate College, Aligarh	4460	64	Ordinary Diploma as Civil Engineer.
16	Prem Nath Sud, B.A.	Government College, Lahore.	4359	62	
17	Harbans Lal Chhabara	D. A. V. College, Lahore.	4342	62	
18	Ram Krishna	Meerut College, Meerut	4339	62	
19	Chandra Pra- kash Govil.	Government College, Ajmer.	4268	61	

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No	Names	Where educated	Marks gained	Per cent	Remarks
CIVIL ENGINEER CLASS THIRD YEAR—(concl'd)					
20	Parimal Kumar Mukherjee	College of Science, Nagpur	4230	61	} Ordinary Diploma as Civil Engineer.
21	Benarsidas Tan dan	S D College, Cawnpore	4131	59	
22	Bidhu Ranjan Sen, M Sc	Christian College, Lucknow	4095	59	
23	Maresh Pr sad Kapoor	Ewing Christian College, Allahabad	4014	57	
24	Shanti Kumar Charan	Agra College, Agra	3944	57	
25	Amal Kumar Roy	Government Inter mediate College, Allahabad	3898	56	
26	Ved Mitra Manglik	D A V College, Dehra Dun	3758	54	

No	Names	Where educated	Marks	Rank	Remarks
OVERSEER CLASS, SECOND YEAR. (Full marks—4000)					
1	Vishwambhar Prasad.	Government High School, Fatehpur	3264	89	Higher Certificate as Overseer Silver Medal and Rs 100 for General Merit Rai Bahadur Kanhaiya Lal Silver Medal for the best Indian student who stands 1st in the class The Durpa Das Dutt Silver Medal for the best Indian student obtaining Higher Certificate Sullivan Memorial Silver Medal for Mechanics The Puran Mal Silver Medal for Public Health Engineering Silver medals for descriptive engineering, surveying drawing and workshops (Group V)
2	Krishna Kumar	Government College Ajmer	2954	74	Higher Certificate as Overseer Rai Bahadur Kanhaiya Lal Silver Medal for Indian student who stands 2nd in the class
3	Sahdeo Prasad	Meerut College, Meerut	2923	73	Higher Certificate as Overseer Silver Medal for Mathematics Elementary
4	Jai Bhagwan Gupta	S M Intermediate College Chand ausi	2860	72	Higher Certificate as Overseer Fairly Memorial Silver Medal for Applied Mechanics Keay Memorial Silver Medal and Rs 18 for Estimating
5	Om Prakash Gupta	Government Technical School, Lucknow	2847	71	Higher Certificate as Overseer

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No.	Names	Where educated	Marks gained	Per cent	Remarks
6	Virendra Nath Tripathi	B N S D Inter mediate, College Cawnpore	2720	67	Higher Certificate as Overseer.
7	Mahendra Na rain Mathur	Meerut College Meerut	2715	68	
8	Pratap Singh Perti	A P Mission Boys' High School D hira Dun	2684	66	
9	Brij Mohan Lal Gupta	Hindu College, Delhi	2675	67	
10	Qaisar Husain	Government High School Muzaffar nagar	2659	66	
11	Ramji Lal Garg	Agra College, Agra	2580	65	
12	Sayid Muham mad Murtaza Rizvi	Forbes High School Fyzabad	2559	64	
13	Shiva Prakash Singhal	Meerut College Meerut	2485	62	
14	Tulok Chandra Agarwal	Lucknow Christian College, Lucknow	2456	61	
15	Krishna Chan dra Gupta	University of Allah abad	2439	61	Higher Certificate as Overseer Silver Medal for Project
16	Shiva Dayal Govila	Ditto	2434	61	
17	Puran Chand	Government High School Muzaffar nagar	2421	61	Higher Certificate as Overseer
18	Jaiwant Rai Jain	D A V College, Jullundur	2420	61	
19	Mahabir Prasad Jain	Meerut College, Meerut	2390	60	Ordinary Certificate as Overseer
20	Ramesh Chan dra	Ditto	2375	59	
21	Randhir Singh Chohan	Bareilly College, Bareilly	2360	59	
22	Ram Kishore Ojha (Ajmer Merwara)	Government Col lege, Ajmer	2344	59	

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No	Names	Where educated	Marks gained	Per cent	Remarks
23	Jai Prakash	Meerut College, Meerut	2339	58	} Ordinary Certificate as Overseer
24	Bhagwat Swa rup Gupta	N R F C Inter mediate College, Khurja	2337	58	
25	Vam Chand	Government C O High School, Roorkee	2311	56	
26	Brij Bhushan Sharma	D A V College, Dehra Dun	2293	55	
27	Phool Chand Goyal	Meerut College, Meerut	2262	57	
28	Mahabir Prasad	S D Intermediate College, Muzaffar nagar	2259	56	
29	Gajal Singh Rawat	K G Government High School Lans downe (Garhwal)	2254	56	
30	Davendra Ku mar Jain	D A V College, Dehra Dun	2237	56	
31	Ugra Sen Gup ta	Government C O High School, Roorkee	2212	55	
32	Riaz Ahmad Quraishi	Muslim High School, Buland shahr	2199	55	
33	Bhim Sen	H A V High School, Deoband	2198	55	
34	Champat Lal Sharma	K G K High School Hardei	2177	54	
35	Talqin Ahmad	Government High School, Muzaffar nagar	2162	54	
36	Ram Das Mit tal	Ditto	2153	54	
37	Triloki Nath Sharma	Meerut College Meerut	2144	54	
38	Raghuvar Da yal	Government High School Saharan pur	2111	53	
39	Keshava Chan dra	N A S High School Meerut	2101	53	} Higher Certificate as Overseer Trained for employment in the Bharatpur State only.
	Gobind Prasad Mehrishi (Bha ratpur)	Sadar High School, Bharatpur	2803	70	
	Krishna Sahai Srivastava (Bharatpur)	St John's College Agra	2605	65	

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No	Names of students	Remarks
	DRAFTSMAN CLASS, THIRD YEAR	
1	Chandi Lal Jaiswar	Certificate as Draftsman in first division Silver Medal and Rs 30 for Best Draftsman Qualified in Estimating
2	Bimal Kumar Jain	Certificate as Draftsman in first division Silver Medal and Rs 20 for second Best Draftsman Qualified in Estimating
3	Kailash Chandra Jain	Certificate as Draftsman in first division Qualified in Estimating
4	Hari Deo	Certificate as Draftsman in second division Not qualified in Estimating
5	Nihal Chand Gupta	} Certificate as Draftsman in second division Qualified in Estimating
6	Sumer Chand Gupta	
7	Kailash Chand Gupta	

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No	Name	Where educated	Marks Gained	Per cent	Remarks
CIVIL ENGINEER CLASS, THIRD YEAR (Full marks—7790)					
1	Vidya Ram Vaish	E. C. College, Allahabad	6419	82	Honours Diploma as Civil Engineer Council of India Prize of Rs 1,000 for General Proficiency Calcott Reilly Me- morial Gold Medal for Applied Mecha- nics Gaultley Me- morial Gold Medal for Mathematics (Group II) General MacLagan's prize of books for Electrical Engineering and Physics Sushula and J. Mitra Me- morial Silver Medal for Indian student who obtains highest marks in Chemistry Silver Medals for Civil Engineering (Theoretical) and Mechanical Engi- neering
2	Sayid Sabir Ali Wahidi	Christ Church College Cawn- pore	6037	80	Honours Diploma as Civil Engineer Tho- mason Memorial Prize of Rs 250 for the most disting- uished student who obtains the Honours Diploma but does not gain the Council of India Prize Sil- ver Medal for Sur- veying The Puran- mal Silver Medal for Public Health Engineering

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No	Name	Where educated	Marks gained	Per cent	Remarks
3	Om Prakash	S M Intermediate College Chandausi	6050	78	Honours Diploma as Civil Engineer Rai Bahadur Kanhaiya Lal Gold Medal for the most disting- uished student who does not obtain the Council of India or Thomason Memorial Prizes
4	Om Datt Sharma B.Sc.	University of Allahabad,	5923	76	Honours Diploma as Civil Engineer Silver Medal for Drawing
5	Dharampal Singh Tomar B.Sc.	Agra College Agra	5865	75	
6	Rajendra Prasad Agarwal	E C College Allahabad	5810	75	
7	Sunder Lal Gupta B.A.	Government Col- lege Lahore	5670	73	
8	Hanantar Prasad Ghose	University of Allahabad	5678	72	
9	Profullo Kumar Banerji B.Sc.	Ditto	5494	71	
10	Ratish Mohan Agrawala B.A.	Ditto	5398	69	Honours Diploma as Civil Engineer
11	Balbir Krishan Uppal	Government Col- lege, Lahore	5313	68	
12	Brahm Swarup Bhalla	Dyal Singh Col- lege Lahore	5232	68	
13	Pratap Singh B.Sc.	E C College, Allahabad	5174	66	
14	Anurudh Singh	U P College and S K School, Benar- ses	5141	66	

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No.	Name	Where educated	Marks gained	Per cent.	Remarks
CIVIL ENGINEER CLASS, THIRD YEAR					
(Full marks—7730)					
1	Vidya Ram Vaish.	E. C. College, Allahabad	6419	82	Honours Diploma as Civil Engineer. Council of India Prize of Rs 1,000 for General Proficiency Calcott Reilly Memorial Gold Medal for Applied Mechanics Cantley Memorial Gold Medal for Mathematics (Group II) General MacLagan's prize of books for Electrical Engineering and Physics Sushula and J. Mitra Memorial Silver Medal for Indian student who obtains highest marks in Chemistry. Silver Medals for Civil Engineering (Theoretical) and Mechanical Engineering
2	Sayid Sabir Ali Wahidi	Christ Church College, Cawnpore	6237	80	Honours Diploma as Civil Engineer Thomson Memorial Prize of Rs 250 for the most distinguished student who obtains the Honours Diploma but does not gain the Council of India Prize. Silver Medal for Surveying The Furan Mal Silver Medal for Public Health Engineering

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No	Name	Where educated	Marks gained	Per cent	Remarks
28	Shakti Chand Uppal, B.A	Government Col lege Lahore	4611	59	} Ordinary Diploma as Civil Engineer
29	Victor Braganza	St Joseph's College, Naini Tal	4563	59	
30	Rajnarayan Misra B.Sc	Nizam College, Hyderabad, Deccan	4476	57	
31	Arjun Dutt Chowdhri	E C College, Allahabad	4312	55	
32	Ambarish Verma	D A V College, Dehra Dun	4249	55	

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No	Name	Where educated	Marks gained	Per cent	Remarks
15	Ravindra Nivas	University of Allahabad	5043	65	Ordinary Diploma as Civil Engineer
16	Brj Bhushan Bansal, B.Sc	Ditto	4958	64	
17	Jyoti Prakash B.Sc	Meerut College, Meerut	4978	64	
18	Arun Kumar Sur	University of Allahabad	4947	64	Ordinary Diploma as Civil Engineer Silver Medal for Laboratory Practice Group IV Practical
19	Kishan Lal Gupta, B.Sc	Meerut College, Meerut	4890	63	Ordinary Diploma as Civil Engineer
20	Braj Narain Dube	University of Allahabad	4890	63	
21	Krishna Kamal Chakravarti, B.Sc	Government Jubilee Intermediate College Lucknow	4801	62	Ordinary Diploma as Civil Engineer Thomason Memorial Gold Medal and books worth Rs 20 for best Engineering Designs
22	Sayid Sibte Hasan B.Sc	Lucknow University	4812	62	Ordinary Diploma as Civil Engineer
23	Gurraj Kishore Gupta	Agra College, Agra	4794	60	
24	Chaman Lal Ahluwalia, B.A	D A V College Lahore	4782	61	
25	Kulbir Singh	Khalsa College Amritsar	4750	61	
26	Daya Prakash	University of Allahabad	4749	61	
27	Vishwambhar Dayal, B.Sc,	Meerut College Meerut	4695	60	

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No	Name	Where educated	Marks gained	Per cent	Remarks
28	Shakti Chand Uppal B A	Government Col lege, Lahore	4611	59	} Ordinary Diploma as Civil Engineer
29	Victor Braganza	St Joseph's College, Naini Tal	4563	59	
30	Rajnarayan Misra, B.Sc	Nizam College Hyderabad Deccan	4476	57	
31	Arjun Dutt Chowdhri	E C College, Allahabad	4312	55	
32	Ambarish Verma	D, A V College Dehra Dun	4249	55	

1941

No	Name	Where educated	Marks gained		Per cent.	Remarks
15	Ravindra Nivas	University of Allahabad	5043	85	}	Ordinary Diploma as Civil Engineer
16	Brij Bhushan Bansal, B.Sc.	Ditto	4988	84		
17	Jyoti Prakash, B.Sc.	Meerut College, Meerut	4978	84		
18	Arun Kumar Sur	University of Allahabad	4947	84	}	Ordinary Diploma as Civil Engineer Silver Medal for Laboratory Practice Group IV, Practical
19	Kashan Lal Gupta, B.Sc.	Meerut College, Meerut	4895	83		
20	Braj Narain Dube	University of Allahabad	4895	83		
21	Krishna Kamal Chakravarti, B.Sc.	Government Jubilee Intermediate College, Lucknow	4851	82	}	Ordinary Diploma as Civil Engineer Thomason Memorial Gold Medal and books worth Rs 25 for best Engineering Designs
22	Sayyid Sibto Hasan B.Sc.	Lucknow University	4812	82		
23	Girraj Kishore Gupta	Agra College, Agra	4794	82		
24	Chaman Lal Ahluwalia, B.A.	D. A. V. College Lahore	4782	81	}	Ordinary Diploma as Civil Engineer
25	Kulbir Singh	Khalsa College, Amritsar	4752	81		
26	Daya Prakash	University of Allahabad	4749	81		
27	Vishwambhar Dayal, B.Sc.	Meerut College Meerut	4695	80	}	

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No	Names	Where educated	Marks Gained	Per cent.	Remarks
6	Anand Parlash	Meerut College, Meerut	2874	72	Higher Certificate as Overseer
7	Jai Nand Pra lash	Ditto	2825	71	
8	Ram Swarup Vaish	Kashi Ram High School, Saha ranpur	2690	67	
9	Rameshwar Dayal	N R E C. In termediate Col lege, Khurja	2671	67	
10	Salok Chand	D Jun High School, Baraut	2641	66	
11	Mangat Rai Singhal	N A S High School Meerut	2616	65	Higher Certificate as Overseer Silver Medal for Project
12	Mahipal Singh	D N High School, Meerut	2607	65	
13	Ramesh Chan dra Garg	N R E C In termediate Col lege, Khurja	586	63	
14	Bhopal Singh	Meerut College, Meerut	2521	63	
15	Praduman Ku mar	Ditto	2515	63	
16	Dhanesh Chan dra Goel	D S Intermed ate College, Aligarh	2411	63	Higher Certificate as Overseer
17	Shanti Swarup Garg	S D Intermedi ate College, Muzaffarnagar	2496	62	
18	Jagdish Saran Goel	S M Intermedi ate College, Chandauli	2473	62	
19	Kunj Behari Lal	Government In termediate Col lege, Etawah	2468	62	Ordinary Certificate as Overseer The Puran Mal Silver Medal for Public Health Engineering
					Higher Certificate as Overseer

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No	Names	Where educated	Marks gained	Per cent	Remarks
OVERSEER CLASS, SECOND YEAR					
(Full marks—4000)					
1	Krishna Chandra	H A S High School Kan dhla	3285	82	Higher Certificate as Overseer, Silver Medal and Rs 100 for general merit, Rai Bahadur Kanhaiya Lal Silver Medal for best Indian student who stands first in the class The Durga Das Dutt Silver Medal for best Indian student who obtains Higher Certificate Fairley Memorial Silver Medal for Applied Mechanics Kay Memorial Silver Medal and Rs 18 for Estimating, Sullivan Memorial Silver Medal for Mechanics Silver Medals for Descriptive Engineering, Survey and Work shops (Group V)
2	Netra Sharma	Pal Agra College, Agra	3009	75	Higher Certificate as Overseer Rai Bahadur Kanhaiya Lal Silver Medal for the Indian student who stands second in the class Silver Medals for Mathematics (Elementary) and Drawing
3	Prem Chand Jain	Government High School, Saharanpur	2921	73	Higher Certificate as Overseer
4	Sayid Iftikhar Hussain	Government High School Aligarh	2904	73	
5	Rama Shankar	Bareilly College, Bareilly	2899	72	

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No	Names	Where educated	Marks gained	Per cent	Remarks
34	Sayid Mehdi Naqvi	Muslim Univer sity, Aligarh	2272	57	} Ordinary Certificate as Overseer
35	Ram Kumar Sharma	S M Intermedi ate College, Chandausi	2258	56	
36	Shanti Saran Agarwal	Bareilly College, Bareilly	2228	56	
37	Uma Shanker..	Meerut College, Meerut	2210	55	
38	Om Prakash Kansal	N A S High School Meerut	2188	55	
39	Ejaz Husain	Kali Charan High School, Luck now	2186	55	
40	Hira Lal Gupta	D A V High School, Agra	2157	54	
41	Radhay Lal Agarwal	S M Intermedi ate College, Chandausi	2121	53	
42	Chintamani Tewari	Government In termediate Col lege, Etawah	2081	52	
43	Brij Bhushan Lal	S D E High School, Muza ffarnagar	2035	51	
	Mahesh Naran (Bharatpur State)	Sardar High School, Bharat pur	2346	59	

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No	Names	Where educated	Marks Gained	Per cent	Remarks
20	Atar Singh Tiagi	D N S High School, Meerut	2462	62	Higher Certificate as Overseer
21	Mahendra Ku mar	D A V College, Dehra Dun	2461	62	
22	Lachbhu Ram Saraswat	D S Intermedi ate College, Aligarh	2456	61	
23	Jai Prakash Agarwal	S D Intermedi ate College, Muzaffarnagar	2447	61	
24	Tirlok Nath	D N High School Meerut	2446	61	
25	Khalidur Rah man	Government In termediate College, Morad abad	2437	61	Higher Certificate as Overseer
26	Mahendra Shar ma	St Andrews Col lege Gorakh pur	2427	61	
27	Ranbur Prasad Jain	Durbar Interme diate College, Rewa.	2420	61	
28	Kishori Lal Agrawal	N R E C In termediate Col lege, Khurja	2418	60	Higher Certificate as Overseer
29	Anand Swarup	K D A V High School Roor kee	2414	60	
30	Jagdish Chandra Gupta	Herbert College, Kotah	2371	59	Ordinary Certificate as Overseer
31	Jai Prakash Sangal	Government C O High School, Roorkee	2352	59	
32	Mehdi Ali	S D College Muzaffarnagar	2289	57	
33	Umrao Singh Sharma	D S Intermedi ate College Aligarh	2276	57	

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No	Names	Where educated	Marks gained	Per cent	Remarks
34	Sayid Mehdi Naqvi	Muslim Univer sity, Aligarh	2272	57	} Ordinary Certificate as Overseer
35	Ram Kumar Sharma	S M Intermedi ate College, Chandauli	2258	56	
36	Shanti Saran Agarwal	Bareilly College, Bareilly	2228	56	
37	Uma Shanker..	Meerut College, Meerut	2210	55	
38	Om Prakash Kansal	N A S High School, Meerut	2188	55	
39	Ejaz Husain	Kali Charan High School, Luck now	2186	55	
40	Hira Lal Gupta	D A V High School, Agra	2157	54	
41	Radhay Lal Agarwal	S M Intermedi ate College, Chandauli	2121	53	
42	Chintamani Tewari	Government In termediate Col lege, Etawah	2081	52	
43	Brij Bhushan Lal	S D E High School Muza ffarnagar	2035	51	}
	Maresh Narain (Bharatpur State)	Sardar High School, Bharat pur	2346	59	

1941

No	Names	Where educated	Marks gained	Per cent	Remarks
20	Atar Singh Tiagi	D N S High School, Meerut	2462	62	Higher Certificate as Overseer
21	Mahendra Ku mar	D A V College, Dehra Dun	2461	62	
22	Lachchi Ratn Saraswat	D S Intermedi ate College Aligarh	2456	61	
23	Jai Prakash Agarwal	S D Intermedi ate College, Muzaffarnagar	2447	61	
24	Tirloki Nath	D N High School, Meerut	2446	61	
25	Khaljur Rah man	Government In termediate College, Morad abad	2437	61	Ordinary Certificate as Overseer
26	Mahendra Shar ma	St Andrews Col lege Gorakh pur	2427	61	
27	Ranbir Prasad Jain	Durbar Interme diate College, Rewa	2420	61	
28	Kishori Lal Agrawal	N R E C In termediate Col lege, Khurja	2418	60	Higher Certificate as Overseer
29	Anand Swarup	K D A V High School, Roor kee	2414	60	
30	Jagdish Chandra Gupta	Herbert College, Kotah	2371	59	Ordinary Certificate as Overseer
31	Jai Prakash Sangal	Government C O High School, Roorkee	2352	59	
32	Mehdi Ali	S D College, Muzaffarnagar	2289	57	
33	Umrao Singh Sharma	D S Intermedi ate College, Aligarh	2270	57	

1941

No	Names	Where educated	Marks gained	Per cent	Remarks
34	Sayid Mehdi Naqvi	Muslim University, Aligarh	2272	57	} Ordinary Certificate as Overseer
35	Ram Kumar Sharma	S M Intermediate College, Chandausi	2258	56	
36	Shanti Saran Agarwal	Bareilly College, Bareilly	2228	56	
37	Uma Shanker..	Meerut College, Meerut	2210	55	
38	Om Prakash Kansal	N A S High School, Meerut	2188	55	
39	Ejaz Husain	Kali Charan High School, Lucknow	2186	55	
40	Hira Lal Gupta	D A V High School, Agra	2157	54	
41	Radhay Lal Agarwal	S M Intermediate College, Chandausi	2121	53	
42	Chintamani Tewari	Government Intermediate College, Etawah	2081	52	
43	Brij Bhusan Lal	S D E High School, Muzaffarnagar	2035	51	
	Mahesh Narain (Bharatpur State)	Sardar High School, Bharatpur	2346	59	

1941

No	Names	Where educated	Marks gained	Per cent	Remarks
20	Atar Singh Tiagi	D N S High School, Meerut	246	62	Higher Certificate as Overseer
21	Mahendra Kumar	D A V College, Dehra Dun	246	62	
22	Lachchu Ram Saraswat	D S Intermediate College Aligarh	245	61	
23	Jai Prakash Agarwal	S D Intermediate College, Muzaffarnagar	244	61	
24	Tirloki Nath	D N High School Meerut	244	61	
25	Khaliur Rahman	Government Intermediate College Moradabad	243	61	Ordinary Certificate as Overseer
26	Mahendra Sharma	St Andrews College Gorakhpur	242	61	
27	Ranbir Prasad Jain	Durbat Intermediate College, Rewa	242	61	
28	Kishori Lal Agrawal	N R E C Intermediate College, Khurja	241	60	Higher Certificate as Overseer
29	Anand Swarup	K D A V High School Roorkee	241	60	
30	Jagdish Chandra Gupta	Herbert College, Kotah	237	59	Ordinary Certificate as Overseer
31	Jai Prakash Sangal	Government C O High School, Roorkee	235	59	
32	Melki Ali	S D College, Muzaffarnagar	228	57	
33	Umrso Singh Sharma	D S Intermediate College Aligarh	227	57	

1941

No	Names	Where educated	Marks gained	Per cent	Remarks
34	Sayid Mehdi Naqvi	Muslim Univer sity, Aligarh	2272	57	} Ordinary Certificate as Overseer
35	Ram Kumar Sharma	S M Intermedi ate College, Chandauli	2258	56	
36	Shanti Saran Agarwal	Bareilly College, Bareilly	2228	56	
37	Uma Shanker..	Meerut College, Meerut	2210	55	
38	Om Prakash Kansal	N A S High School, Meerut	2188	55	
39	Ejaz Husain	Kali Charan High School, Luck now	2186	55	
40	Hira Lal Gupta	D A V High School, Agra	2157	54	
41	Radi ay Lal Agarwal	S M Intermedi ate College, Chandauli	2121	53	
42	Chintamani Tewari	Government In term diate Col lege, Etawah	2081	52	
43	Brj Bhushan Lal	S D E High School Muza ffarnagar	2035	51	}
	Mahesh Narain (Bharatpur State)	Sardar High School, Bharat pur	2346	59	

1941

No	Names	Where educated	Marks gained	Per cent	Remarks
20	Atar Singh Tiagi	D N S High School, Meerut	2462	62	Higher Certificate as Overseer
21	Mahendra Ku mar	D A V College, Dehra Dun	2461	62	
22	Lachchi Ram Saraswat	D S Intermedi ate College Aligarh	2456	61	
23	Jai Prakash Agarwal	S D Intermedi ate College Muzaffarnagar	2447	61	
24	Tirlok Nath	D N High School, Meerut	2446	61	
25	Khalidur Rah man	Government In termediate College Morad abad	2437	61	Ordinary Certificate as Overseer
26	Mahendra Shar ma	St Andrews Col lege Gorakh pur	2427	61	
27	Ranbir Prasad Jain	Durbar Interme diate College, Rewa	2420	61	
28	Kishori Lal Agrawal	N R E C In termediate Col lege, Khurja	2418	60	Higher Certificate as Overseer
29	Anand Swarup	K D A V High School, Roor kee	2414	60	
30	Jagdish Chandra Gupta	Herbert College, Kota	2371	59	Ordinary Certificate as Overseer
31	Jai Prakash Sangal	Government C O High School, Roorkee	2352	59	
32	Mehdi Ali	S D College Muzaffarnagar	2289	57	
33	Umrao Singh Sharma	D S Intermedi ate College Aligarh	2276	57	

1941

No	Names	Where educated	Marks gained	Per cent	Remarks
34	Sayid Mehdi Naqvi	Muslim Univer sity, Aligarh	2272	57	} Ordinary Certificate as Overseer
35	Ram Kumar Sharma	S M Intermedi ate College, Chandauli	2258	56	
36	Shanti Saran Agarwal	Bareilly College, Bareilly	2228	56	
37	Uma Shanker..	Meerut College, Meerut	2210	55	
38	Om Prakash Kansal	N A S High School, Meerut	2188	55	
39	Ejaz Husain	Kali Charan High School, Luck now	2186	55	
40	Hira Lal Gupta	D A V High School, Agra	2157	54	
41	Radhay Lal Agarwal	S M Intermedi ate College, Chandauli	2121	53	
42	Chintamani Tewari	Government In termediate Col lege, Etawah	2081	52	
43	Brj Bhushan Lal	S D E High School Muza ffarnagar	2035	51	}
	Mahesh Narain (Bharatpur State)	Sardar High School, Bharat pur	2346	59	

1941

No	Names of students	Remarks
DRAFTSMAN CLASS THIRD YEAR		
1	Sarda Ram	First Division Silver Medal and Rs 30 for Best Draftsman Quali- fied in Estimating
2	Churaman Gupta	First Division Silver Medal and Rs 20 for 2nd Best Draftsman Qualified in Estimating
3	Nawal Kishore	First Division Qualified in Esti- mating
4	Tara Chand Dhumar	{ Second Division Qualified in Esti- mating
5	Muhammad Rashid Ansari	
6	Amin Ahmad Siddiqi	Third Division Not Qualified in Estimating
7	Hari Ram Vaish	Second Division qualified in Esti- mating certificate awarded on 6th September 1941 (Completed course in two years)

1912

No	Name	Where educated	Marks gained	Per cent	Remarks
CIVIL ENGINEER CLASS THIRD YEAR (Full marks—7790)					
1	Prem Manohar B sc	Meerut College Meerut	6275	80	Honours Diploma as Civil Engineer Council of India Prize of Rs 1 000 for General Proficiency Cautley Memorial, Gold Medal for Mathematics (Group II) Calcott Reilly Memorial Gold Medal for Applied Mechanics General MacLagan's Prize of Books for Electrical Engineering and Physics Silver Medals for Civil Engineering (Theoretical) and Laboratory Practice Group IV (Practical)
2	Indra Kumar Gupta B sc	Col Brown's School Dehra Dun	6110	78	Honours Diploma as Civil Engineer Thomason Memorial Prize of Rs 50 for the most distinguished student who obtains the Honours Diploma but does not gain the Council of India Prize
3	Ajit Kumar Chakravarti, B sc	Muir Central College Allahabad	6108	79	Honours Diploma as Civil Engineer Rai Bahadur Kanhaiya Lal Gold Medal for the most distinguished student who does not obtain the Council of India or Thomason Memorial Prizes Sushila and J. Mitra Memorial Silver Medal for Indian student who

1941

1941		
No	Names of students	Remarks
DRAFTSMAN CLASS THIRD YEAR		
1	Sarda Ram	First Division Silver Medal and Rs 30 for Best Draftsman Quali fied in Estimating
2	Churaman Gupta	First Division Silver Medal and Rs 20 for 2nd Best Draftsman Qualified in Estimating
3	Nawal Kishore	First Division Qualified in Esti mating
4	Tara Chand Dhuman	{ Second Division Qualified in Esti mating
5	Muhammad Rashid Ansari	
6	Amin Ahmad Siddiqi	Third Division Not Qualified in Estimating
7	Hari Ram Vaish	Second Division qualified in Esti mating certificate awarded on 6th September 1941 (Completed course in two years)

1942

No	Name	Where educated	Marks gained	Pcr cent	Remarks
	CIVIL ENGINEER CLASS, THIRD YEAR (Full marks—7720)				
1	Prem Manohar B sc	Meerut College, Meerut	6225	80	Honours Diploma as Civil Engineer Council of India Prize of Rs 1 000 for General Proficiency Cautley Memorial, Gold Medal for Mathematics (Group II) Calcott Reilly Memorial Gold Medal for Applied Mechanics General MacLagan's Prize of Books for Electrical Engineering and Physics Silver Medals for Civil Engineering (Theoretical) and Laboratory Practice Group IV (Practical)
2	Indra Kumar Gupta, B sc	Col Brown's School Dehra Dun	6110	78	Honours Diploma as Civil Engineer Thomason Memorial Prize of Rs 200 for the most distinguished student who obtains the Honours Diploma but does not gain the Council of India Prize
3	Ajit Kumar Chakravarti, B sc	Muir Central College, Allahabad	6108	79	Honours Diploma as Civil Engineer Rai Bahadur Kanhaiya Lal Gold Medal for the most distinguished student who does not obtain the Council of India or Thomason Memorial Prizes Sushila and J Mitra Memorial Silver Medal for Indian student who obtains highest marks in Chemistry

1941

No.	Names of students	Remarks
	DRAFTSMAN CLASS, THIRD YEAR	
1	Sarda Ram ..	First Division Silver Medal and Rs 30 for Best Draftsman Qualified in Estimating
2	Churaman Gupta ..	First Division. Silver Medal and Rs 20 for 2nd Best Draftsman Qualified in Estimating
3	Nawal Kishore .	First Division. Qualified in Estimating
4	Tara Chand Dhiman ..	} Second Division Qualified in Estimating
5	Muhammad Rashid Ansari	
6	Amin Ahmad Siddiqi ..	Third Division Not Qualified in Estimating
7	Hari Ram Vaish ..	Second Division qualified in Estimating, certificate awarded on 6th September, 1941. (Completed course in two years)

1912

No	Name	Where educated	Marks gained	Per cent	Remarks
	CIVIL ENGINEER CLASS, THIRD YEAR (Full marks—7720)				
1	Prem Manohar B Sc	Meerut College Meerut	6225	80	Honours Diploma as Civil Engineer Council of India Prize of Rs 1 000 for General Proficiency Cautley Memorial, Gold Medal for Ma- thematics (Group II) Calcott Reddy Memo- rial Gold Medal for Applied Mechanics General MacLagan's Prize of Books for Electrical Engineer- ing and Physics Silver Medals for Civil Engineering (Theore- tical) and Laboratory Practice Group IV (Practical)
2	Indra Kumar Gupta B Sc	Col Brown's School Dehra Dun	6110	78	Honours Diploma as Civil Engineer Thomason Memo- rial Prize of Rs 250 for the most distin- guished student who obtains the Honours Diploma but does not gain the Council of India Prize
3	Ajit Kumar Chakravarti B Sc	Muir Central Col- lege, Allahabad	6108	79	Honours Diploma as Civil Engineer Rai Bahadur Kan- haya Lal Gold Medal for the most distin- guished student who does not obtain the Council of India or Thomason Memo- rial Prize, Sushila and J Mitra Memo- rial Silver Medal for Indian student who obtains highest

1942

No	Name	Where educated	Marks Gained	Per cent	Remarks
4	Mahavir Prasad, B sc	Allahabad Uni- versity, Allah abad.	6021	77	Honours Diploma as Civil Engineer Silver Medal for Me- chanical Engineer- ing
5	Parshottam Saran Agra wala, B sc.	Government Inter- mediate College, Moradabad	6016	77	Honours Diploma as Civil Engineer Thomason Memorial Gold Medal and books worth Rs 25 for best Engineering Designs Silver Medal for Surveying
6	Rajendra Nath Srivastava, B sc	K. P University College, Allah abad	5639	72	Honours Diploma as Civil Engineer Silver Medal for Drawing
7	Baij Nath Pra- sad Gupta	Ewing Christian College, Allah abad	5629	72	Honours Diploma as Civil Engineer
8	Saran Prasad Caprihan	Radhawsami Edu- cational Insti- tute, Dayalbagh, Agra	5564	71	Ditto
9	Cyril Carlton Gilbert	St Joseph's Col- lege, Naini Tal	5376	69	Ditto
10	Shri Krishna Garg B sc.	B N S D Inter- mediate College, Cawnpore	5334	68	Ditto
11	Poresh Nath Roy	Government Inter- mediate College, Lucknow	5173	66	Ditto
12	Manohar Singh, B sc	Allahabad Uni- versity, Allah abad	5110	66	Ordinary Diploma as Civil Engineer
13	Sohan Lal Goyal	Meerut College, Meerut	5085	65	Ditto
14	Jyoti Prasad Bhargava, B sc	Christian College, Lucknow	5055	65	Ditto
15	Krishna Chan- dra Tayaal, B sc	Meerut College, Meerut	4968	64	Ditto

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
16	Damodar Das	Meerut College, Meerut	4955	64	Ordinary Diploma as Civil Engineer
17	Salimullah Khan, B Sc	Aligarh Muslim University, Al- garh	4937	63	Ditto
18	Krishna Mohan Mall, B A	K. P. University College, Allah- abad	4821	62	Ditto
19	Jagdish Kumar Saxena	Bareilly College, Bareilly.	4788	62	Ditto
20	Ram Rich Pal Goel, B Sc	Meerut College, Meerut	4685	60	Ditto
21	Shamsuddin Ahmed Sid- diqui, B A	Allahabad Uni- versity, Allah- abad	4678	60	Ditto
22	Prem Chand, B Sc	Radhaswami Edu- cational Insti- tute, Dayalbagh, Agra	4592	59	Ditto
23	Harj Mahadeo Inamdar	College of Science, Nagpur	4539	58	Ditto
24	Iftikhar Ali, B Sc	Meerut College, Meerut	4536	58	Ditto
25	Prem Shankar Sinha	Government Inter- mediate College Allahabad	4432	57	Ditto
26	Swami Dial, B A	St Stephen's Col- lege, Delhi	4428	57	Ditto
27	Yograj, B Sc	Meerut College, Meerut	4234	54	Ordinary Diploma as Civil Engineer. The Pura Mal Silver Medal for Public Health Engineering
28	Raghubir Sahai Mathur, B Sc	St Stephen's Col- lege, Delhi	4197	54	Ordinary Diploma as Civil Engineer
29	Kishan Lal Maheshwari	Agra College, Agra			Expelled

1942

No	Name	Where educated	Marks Gained	Per cent	Remarks
4	Mahavir Prasad, B Sc	Allahabad Uni- versity, Allah- abad	6021	77	Honours Diploma as Civil Engineer Silver Medal for Me- chanical Engineer- ing
5	Parshottam Saran Agra wala, B Sc	Government Inter- mediate College, Moradabad	6016	77	Honours Diploma as Civil Engineer Thomason Memorial Gold Medal and books worth Rs 25 for best Engineering Designs Silver Medal for Surveying
6	Rajendra Nath Srivastava, B Sc	K. P University College, Allah- abad	5639	72	Honours Diploma as Civil Engineer Silver Medal for Drawing
7	Bay Nath Pra- sad Gupta	Ewing Christian College, Allah- abad	5629	72	Honours Diploma as Civil Engineer
8	Saran Prasad Caprihan	Radhawsami Edu- cational Insti- tute, Dayalbagh, Agra	5564	71	Ditto
9	Cyril Carlton Gilbert	St Joseph's Col- lege, Naini Tal	5376	69	Ditto
10	Shri Krishna Garg, B Sc	B N S D Inter- mediate College, Cawnpore	5334	68	Ditto
11	Poresb Nath Roy	Government Inter- mediate College, Lucknow	5173	66	Ditto
12	Manohar Singh, B Sc	Allahabad Uni- versity, Allah- abad	5110	66	Ordinary Diploma as Civil Engineer
13	Sohan Lal Goyal	Meerut College, Meerut	5085	65	Ditto
14	Jyoti Prasad Bhargava, B Sc	Christian College, Lucknow	5055	65	Ditto
15	Krishna Chan- dra Taya, B Sc	Meerut College, Meerut	4908	64	Ditto

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
16	Damodar Das	Meerut College, Meerut	4955	64	Ordinary Diploma as Civil Engineer
17	Salimullah Khan, B.Sc.	Aligarh Muslim University, Al- garh	4937	63	Ditto
18	Krishna Mohan Mall, B.A.	K. P. University College, Allah- abad	4821	62	Ditto
19	Jagdish Kumar Saxena	Bareilly College, Bareilly	4788	62	Ditto
20	Ram Rich Pal Goel, B.Sc.	Meerut College, Meerut	4635	60	Ditto
21	Shamsuddin Ahmed Siddiqi, B.A.	Allahabad Uni- versity, Allah- abad	4678	60	Ditto
22	Prem Chand, B.Sc.	Radhaswami Edu- cational Insti- tute, Dayalbagh Agra	4592	59	Ditto
23	Harī Mahadeo Inamdar	College of Science, Nagpur	4539	58	Ditto
24	Iftikhar Ali, B.Sc.	Meerut College, Meerut	4536	58	Ditto
25	Prem Shankar Sinha	Government Inter- mediate College Allahabad	4432	57	Ditto
26	Swami Dial, B.A.	St. Stephen's Col- lege Delhi	4428	57	Ditto
27	Yograj B.Sc.	Meerut College, Meerut	4234	54	Ordinary Diploma as Civil Engineer The Pura Mal Silver Medal for Public Health Engineering
28	Raghuvar Sahai Mathur B.Sc.	St. Stephen's Col- lege, Delhi	4197	54	Ordinary Diploma as Civil Engineer
29	Kishan Lal Maheshwari	Agra College Agra			Expelled

1942

No	Name	Where educated	Marks Gained	Per cent.	Remarks
4	Mahavir Prasad, B Sc	Allahabad University, Allahabad	6021	77	Honours Diploma as Civil Engineer Silver Medal for Me- chanical Engineer- ing
5	Parshottam Saran Agra wala, B Sc	Government Inter- mediate College, Moradabad	6016	77	Honours Diploma as Civil Engineer Thomason Memorial Gold Medal and books worth Rs 25 for best Engineering Designs Silver Medal for Surveying
6	Rajendra Nath Srivastava, B Sc	K. P University College, Allah- abad	5639	72	Honours Diploma as Civil Engineer Silver Medal for Drawing
7	Bay Nath Pra- sad Gupta	Ewing Christian College, Allah- abad	5629	72	Honours Diploma as Civil Engineer
8	Saran Prasad Caprihan	Radhawsami Edu- cational Insti- tute Dayalbagh, Agra	5564	71	Ditto
9	Cyril Carlton Gilbert	St Joseph's Col- lege, Naini Tal	5376	69	Ditto
10	Shri Krishna Garg, B Sc	B N S D Inter- mediate College, Cawnpore	5334	68	Ditto
11	Poresh Nath Roy	Government Inter- mediate College, Lucknow	5173	66	Ditto
12	Manohar Singh, B Sc	Allahabad Uni- versity, Allah- abad	5110	66	Ordinary Diploma as Civil Engineer
13	Sohan Lal Goyal	Meerut College, Meerut	5045	65	Ditto
14	Jyoti Prasad Bhargava, B Sc	Christian College, Lucknow	5035	65	Ditto
15	Krishna Chan- dra Taya, B Sc	Meerut College, Meerut	4968	64	Ditto

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
16	Damodar Das	Meerut College, Meerut	4955	64	Ordinary Diploma as Civil Engineer
17	Salimullah Khan, B sc	Aligarh Muslim University, Aligarh	4937	63	Ditto
18	Krishna Mohan Mall, B A.	K. P University College, Allahabad	4821	62	Ditto
19	Jagdish Kumar Saxena	Bareilly College, Bareilly	4788	62	Ditto
20	Ram Rich Pal Goel, B sc	Meerut College, Meerut	4685	60	Ditto
21	Shamsuddin Ahmed Siddiqi, B A	Allahabad University, Allahabad	4678	60	Ditto
22	Prem Chand, B sc	Radhaswami Educational Institute, Dayalbagh, Agra	4592	59	Ditto
23	Hari Mahadeo Inamdar	College of Science, Nagpur	4539	58	Ditto
24	Iftikhar Ali, B sc	Meerut College, Meerut	4536	58	Ditto
25	Prem Shankar Sinha	Government Intermediate College Allahabad	4432	57	Ditto
26	Swami Dial, B A	St Stephen's College, Delhi	4428	57	Ditto
27	Yograj, B sc.	Meerut College, Meerut	4234	54	Ordinary Diploma as Civil Engineer The Puran Mal Silver Medal for Public Health Engineering
28	Raghbir Sahai Mathur, B sc	St Stephen's College, Delhi	4197	54	Ordinary Diploma as Civil Engineer
29	Kishan Lal Maheshwari	Agra College, Agra			Expelled

1942

No	Name	Where educated	Marks Passed	Per cent	Remarks
OVERSEER CLASS, SECOND YEAR (Full marks—4000)					
1	Jagdish Chandra Perti	B N S D Intermediate College, Cawnpore	3154	79	Higher Certificate as Overseer Silver Medal and Rs 100 for General Merit Rāj Bahadur Kanhaiya Lal Silver Medal for best Indian student who stands first in the class The Durga Das Dutt Silver Medal for best Indian student obtaining higher certificate Fairly Memorial Silver Medal for Applied Mechanics Silver Medals for Mathematics (Elementary) Descriptive Engineering, Surveying and Workshops, Group V
2	Ram Krishna	D A V High School, Muzaffargarh	2905	73	Higher Certificate as Overseer Rāj Bahadur Kanhaiya Lal Silver Medal for Indian student who stands second in the class Silver Medal for Project
3	Jai Prakash Gupta	Government C O High School, Roorkee	2874	70	Higher Certificate as Overseer Sullivan Memorial Silver Medal for Mechanics
4	Man Bodh Singh	Udai Pratap College, Benares.	2764	69	Higher Certificate as Overseer
5	Devi Dat Chandra	Government Intermediate College, Almora	2757	69	Ditto
6	Hem Chandra Jain	H A S High School, Kandhla	2744	69	Higher Certificate as Overseer Kany Memorial Silver Medal and Rs 18 for Estimating

1912

No	Name	Where educated	Marks gained	Per cent	Remarks
7	Balbir Singh Agrawala	D A V Inter- mediate College, Dehra Dun	2729	69	Higher Certificate as- Overseer,
8	Dwarika Prasad Joshi	D A V College, Cawnpore	2725	68	Ditto
9	Chandra Shekhar	K P Intermediate College, Allah abad	2635	66	Ditto.
10	Bhan Kumar Jain	Government C. High School, Gurgaon	2637	66	Ditto
11	Robindra Mohan Banerji	Bengali Tola High School, Benares	2633	66	Higher Certificate as- Overseer The Puran Mal Silver Medal for Public Health Engineering Silver Medal for Drawing
12	Prem Ratan Garg	D A V College, Dehra Dun	2559	64	Higher Certificate as Overseer
13	Kamta Prasad Sharma	K D A V High School, Roorkee	2548	64	Ditto
14	Suraj Mal Jain	S D Intermediate College, Muzaffar nagar	2508	63	Ditto
15	Ram Chander Jain	Meerut College Meerut	2490	62	Ditto
16	Jai Pralash Agrawala	Government High School Saharan pur	2380	60	Ordinary Certificate as- Overseer
17	Janeshwar Pra- sad Jain	D Jain High School, Baraut	2379	59	Ditto
18	Robindra Pra- tap Singh	Government Inter- mediate College, Fyzabad	2376	59	Ditto
19	Bhasant Bhushan Mitra	S D Intermediate College, Muzaffar nagar	2354	59	Ditto

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
OVERSEER CLASS, SECOND YEAR (Full marks—4000)					
1	Jagdish Chan- dra Perti	B N S D Inter- mediate College, Cawnpore	3154	79	Higher Certificate as Overseer Silver Medal and Rs 100 for General Merit Raj Bahadur Kanhaiya Lal Silver Medal for best Indian student who stands first in the class The Durga Das Dutt Silver Medal for best Indian student obtaining higher certificate Fairly Memorial Silver Medal for Applied Mechanics Silver Medals for Mathematics (Ele- mentary), Descrip- tive Engineering Surveying and Work- shops, Group V
2	Ram Krishna	D A V High School, Muzaffar nagar	2905	73	Higher Certificate as Overseer Raj Baha- dur Kanhaiya Lal Silver Medal for Indian student who stands second in the class Silver Medal for Project
3	Jai Prakash Gupta	Government C O High School, Roorkee	2874	70	Higher Certificate as Overseer Sullivan Memorial Silver Medal for Mechanics
4	Man Bodh Singh	Udai Pratap Col- lege, Benares.	2764	69	Higher Certificate as Overseer
5	Devi Dat Chan- dola	Government Inter- mediate College, Almora.	2757	69	Ditto
6	Hem Chandra Jain	H A S High School, Kandhla.	2744	69	Higher Certificate as Overseer Key Memorial Silver Medal and Rs 18 for Estimating

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
7	Balbir Singh Agrawala	D A V Inter mediate College, Dehra Dun	2729	69	Higher Certificate as Overseer
8	Dwarika Prasad Joshi	D A V College, Cawnpore	2725	68	Ditto
9	Chandra Shekhar	K P Intermediate College, Allah abad	2655	66	Ditto
10	Bhan Kumar Jain	Government C High School, Gurgaon	2637	66	Ditto
11	Robindra Mohan Banerji	Bengali Tola High School Benares	2633	66	Higher Certificate as Overseer The Puran Mal Silver Medal for Public Health Engineering Silver Medal for Drawing
12	Prem Ratan Garg	D A V College Dehra Dun	2559	64	Higher Certificate as Overseer
13	Kamta Prasad Sharma	K D A V High School Roorkee	2548	64	Ditto
14	Suraj Mal Jain	S D Intermediate College Muzaffar nagar	2508	63	Ditto
15	Ram Chander Jain	Meerut College Meerut	2485	62	Ditto
16	Jai Pralash Agrawala	Government High School Saharan pur	2380	60	Ordinary Certificate as Overseer
17	Janeshwar Pra sad Jain	D iam High School Baraut	2379	59	Ditto
18	Robindra Pra tap Singh	Government Inter mediate College Fyzabad	2376	59	Ditto
19	Bharat Bhushan Mittra	S D Intermediate College Muzaffar nagar	2354	59	Ditto

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
OVERSEER CLASS, SECOND YEAR (Full marks—4000)					
1	Jagdish Chandra Perti	B N S D Intermediate College, Cawnpore	3154	79	Higher Certificate as Overseer Silver Medal and Rs 100 for General Merit Ray Bahadur Kanhaiya Lal Silver Medal for best Indian student who stands first in the class The Durga Das Dutt Silver Medal for best Indian student obtaining higher certificate Fairly Memorial Silver Medal for Applied Mechanics Silver Medals for Mathematics (Elementary) Descriptive Engineering Surveying and Work shops, Group V
2	Ram Krishna	D A V High School, Muzaffarnagar	2905	73	High Certificate as Overseer Rai Bahadur Kanhaiya Lal Silver Medal for Indian student who stands second in the class Silver Medal for Project
3	Jai Prakash Gupta	Government C. O. High School, Roorkee	2874	70	Higher Certificate as Overseer Sullivan Memorial Silver Medal for Mechanics
4	Man Bodh Singh	Udai Pratap College, Benares	2764	69	Higher Certificate as Overseer
5	Devi Dat Chandra	Government Intermediate College, Almora	2757	69	Ditto
6	Hem Chandra Jain	H A S High School, Kandla	2744	69	Higher Certificate as Overseer Key Memorial Silver Medal and Rs 18 for Estimating

1942

No	Name	Where educated	Marks Gained	Per cent	Remarks
7	Balbir Singh Agrawala	D A V Inter- mediate College, Dehra Dun	2729	69	Higher Certificate as Overseer
8	Dwarika Prasad Joshi	D A V College, Cawnpore	2725	68	Ditto
9	Chandra Shekhar	K P Intermediate College, Allah abad	2655	66	Ditto
10	Bhan Kumar Jain	Government C. High School, Gurgaon	2637	66	Ditto
11	Robindra Mohan Banerji	Bengali Tola High School, Benares	2633	66	Higher Certificate as Overseer The Puran Mal Silver Medal for Public Health Engineering Silver- Medal for Drawing
12	Prem Ratan Garg	D A V College, Dehra Dun	2559	64	Higher Certificate as Overseer
13	Kamta Prasad Sharma	K D A V High School Roorkee	2548	64	Ditto
14	Suraj Mal Jain	S D Intermediate College, Muzaffar nagar	2505	63	Ditto
15	Ram Chander Jain	Meerut College Meerut	2485	62	Ditto
16	Jai Pralash Agrawala	Government High School, Saharan pur	2380	60	Ordinary Certificate as Overseer
17	Janeshwar Pra- sad Jain	D Jain High School Baraut	2379	59	Ditto
18	Robindra Pra- tap Singh	Government Inter- mediate College Gyabad	2376	59	Ditto
19	Bharat Bhushan Mitra	S D Intermediate College, Muzaffar nagar	2354	59	Ditto

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
OVERSEER CLASS, SECOND YEAR (Full marks—4000)					
1	Jagdish Chandra Perti	B N S D Intermediate College, Cawnpore	3154	79	Higher Certificate as Overseer Silver Medal and Rs 100 for General Merit Rai Bahadur Kanhaiya Lal Silver Medal for best Indian student who stands first in the class The Durga Das Dutt Silver Medal for best Indian student obtaining higher certificate Fairly Memorial Silver Medal for Applied Mechanics Silver Medals for Mathematics (Elementary) Descriptive Engineering Surveying and Work shops Group V
2	Ram Krishna	D A V High School Muzaffar nagar	2905	73	High Certificate as Overseer Rai Bahadur Kanhaiya Lal Silver Medal for Indian student who stands second in the class Silver Medal for Project
3	Jai Prakash Gupta	Government C O High School, Roorkee	2874	70	Higher Certificate as Overseer Sullivan Memorial Silver Medal for Mechanics
4	Man Bodh Singh	Udai Pratap College, Benares.	2764	69	Higher Certificate as Overseer
5	Devi Dat Chandra	Government Intermediate College, Almora	2757	69	Ditto
6	Hem Chandra Jain	H A S High School Kandla	2744	69	Higher Certificate as Overseer Heavy Memorial Silver Medal and Rs 18 for Stimulating

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
7	Balbir Singh Agrawala	D A V Inter mediate College, Dehra Dun	2729	69	Higher Certificate as Overseer
8	Dwarika Prasad Joshi	D A V College, Cawnpore	2725	68	Ditto
9	Chandra Shekhar	K P Intermediate College, Allah abad	2655	66	Ditto
10	Bhan Kumar Jain	Government C High School, Gurgaon	2637	66	Ditto
11	Robindra Mohan Banerji	Bengal Tola High School, Benares	2633	66	Higher Certificate as Overseer The Puran Mal Silver Medal for Public Health Engineering. Silver Medal for Drawing
12	Prem Ratan Garg	D A V College, Dehra Dun	2559	64	Higher Certificate as Overseer
13	Kamta Prasad Sharma	K D A V High School, Roorkee	2548	64	Ditto
14	Suraj Mal Jain	S D Intermediate College, Muzaffar nagar	2508	63	Ditto
15	Ram Chander Jain	Meerut College Meerut	2480	62	Ditto
16	Jai Pralash Agrawala	Government High School, Saharan pur	2380	60	Ordinary Certificate as Overseer
17	Janeshwar Pra sa i Jain	D Jain High School Baraut	2379	59	Ditto
18	Robindra Pra tap Singh	Government Inter mediate College Fyzabad	2376	59	Ditto
19	Bharat Bhushan Mittra	S D Intermediate College, Muzaffar nagar	2354	59	Ditto

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
OVERSLEEP CLASS, SECOND YEAR (Full marks—4000)					
1	Jagdish Chandra Perti	B N S D Intermediate College, Cawnpore	3154	79	Higher Certificate as Overseer Silver Medal and Rs 100 for General Merit Raj Bahadur Kanhaiya Lal Silver Medal for best Indian student who stands first in the class The Durga Das Dutt Silver Medal for best Indian student obtaining higher certificate Fairly Memorial Silver Medal for Applied Mechanics Silver Medals for Mathematics (Elementary) Descriptive Engineering Surveying and Work shops Group V
2	Ram Krishna	D A V High School, Muzaffar nagar	2905	73	High Certificate as Overseer Raj Bahadur Kanhaiya Lal Silver Medal for Indian student who stands second in the class Silver Medal for Project
3	Jai Prakash Gupta	Government C O High School, Roorkee	2874	70	Higher Certificate as Overseer Sullivan Memorial Silver Medal for Mechanics
4	Man Bodh Singh	Udai Pratap College Benares.	2764	69	Higher Certificate as Overseer
5	Devi Dat Chandola	Government Intermediate College, Almora	2757	69	Ditto
6	Hem Chandra Jain	H A S High School, Kandli	2744	69	Higher Certificate as Overseer Heavy Memorial Silver Medal and Rs 18 for Estimating

1942

No	Name	Where educated	Marks Gained	Per cent	Remarks
7	Balbir Singh Agrawala	D A V Inter mediate College, Dehra Dun	2729	69	Higher Certificate as Overseer
8	Dwarika Prasad Joshi	D A V College, Cawnpore	2725	68	Ditto
9	Chandra Shekhar	K P Intermediate College Allah abad	2655	66	Ditto
10	Bhan Kumar Jain	Government C High School, Gurgaon	2637	66	Ditto
11	Robindra Mohan Banerji	Bengali Tola High School Benares	2633	66	Higher Certificate as Overseer The Puran Mal Silver Medal for Public Health Engineering Silver Medal for Drawing
12	Prem Ratan Garg	D A V College Dehra Dun	2559	64	Higher Certificate as Overseer
13	Kamta Prasad Sharma	K D A V High School Roorkee	2548	64	Ditto
14	Suraj Mal Jain	S D Intermediate College Muzaffar nagar	2508	63	Ditto
15	Ram Chander Jain	Meerut College Meerut	2480	62	Ditto
16	Jai Pal ash Agrawala	Government High School Salaran pur	2380	60	Ordinary Certificate as Overseer
17	Janeshwar Pra sad Jain	D Yam High School Baraut	2379	59	Ditto
18	Robindra Pra tap Singh	Government Inter mediate College Lyabab	2376	59	Ditto
19	Bharat Bhishan Mittra	S D Intermediate College Muzaffar nagar	2354	59	Ditto

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
20	Naresh Chan dra Jain	D A V College, Dehra Dun	2351	59	Ordinary Certificate as Overseer
21	Rama Pati Sharma	Meerut College, Meerut	2337	58	Ditto
22	Abdul Muid	Islamic College, Lahore	2304	58	Ditto
23	Churanji Lal Gupta	A V High School, Anupshahr	2263	57	Ditto
24	Kanti Persad Kansal	Meerut College, Meerut	2215	55	Ditto
25	Kulwant Rai	S D Intermediate College, Muzaffar nagar	2166	54	Ditto
26	Ram Chandra Asthana	Agra College Agra	2130	53	Ditto
27	Ratan Lal	Government High School Muzaffar nagar	2127	53	Ditto
28	Hari Narain Gupta	B N S D Inter mediate College Cawnpore	2100	53	Ditto
29	Radiy Lal Sharma(a)	Hindu College, Delhi	2097	52	Ditto
30	Hukam Singh	S D Intermediate College, Muzaffar nagar	2041	51	Ditto
31	Abdul Majid Khan	H A S High School Karnali	2041	51	Ditto
32	Brij Bhushan Raizada	Meerut College Meerut	2039	51	Ditto
33	Alimad Sajjad	Government Col lege, Lahore	2000	50	Ditto

1942

No	Names of student	Remarks
DRAFTSMAN CLASS, TIIRD YEAR		
1	Rama Kant	Certificate as Draftsman in first division Silver Medal and Rs 30 for Best Draftsman Qualified in Estimating
2	Ram Singh Rawat	Certificate as Draftsman in first division Silver Medal and Rs 20 for Best Draftsman Qualified in Estimating
3	Sibte Hasan	Certificate as Draftsman in first division Qualified in Estimating
4	Jugal Kishore	Certificate as Draftsman in second division Qualified in Estimating
5	Rajendra Kumar Gupta	Certificate as Draftsman in second division Qualified in Estimating
6	Itant Ali Khan	Certificate as Draftsman in second division Qualified in Estimating

1942

No	Name	Where educated	Marks gained	Per cent	Remarks
20	Naresh Chan- dra Jain	D A V College, Dehra Dun	2351	59	Ordinary Certificate as Overseer
21	Rama Pati Sharma	Meerut College, Meerut	2337	58	Ditto
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23	Chiranjy Lal Gupta	A V High School, Anupshahr	2263	57	Ditto
24	Kanti Persad Kansal	Meerut College, Meerut	2215	55	Ditto
25	Kulwant Rai	S D Intermediate College, Muzaffar nagar	2166	54	Ditto
26	Ram Chandra Asthana	Agra College Agra	2130	53	Ditto
27	Ratan Lal	Government High School Muzaffar- nagar	2127	53	Ditto
28	Hari Narain Gupta	B A S D Inter mediate College Cawnpore	2109	53	Ditto
29	Radhey Lal Sharma(a)	Hindu College, Delhi	2093	52	Ditto
30	Hukam Singh	S D Intermediate College, Muzaffar nagar	2041	51	Ditto
31	Abdul Majid Khan	H A S High School Kandhla	2041	51	Ditto
32	Brij Bhushan Raizada	Meerut College Meerut	2039	51	Ditto
33	Ahmad Sajjad	Government Col lege Lahore	2000	50	Ditto

1942

No	Names of student	Remarks
	DRAFTSMAN CLASS, THIRD YEAR	
1	Rama Kant	Certificate as Draftsman in first division Silver Medal and Rs 30 for Best Draftsman Qualified in Estimating
2	Ram Singh Rawat	Certificate as Draftsman in first division Silver Medal and Rs 20 for Best Draftsman Qualified in Estimating
3	Sibte Hasan	Certificate as Draftsman in first division Qualified in Estimating
4	Jugal Kishore	Certificate as Draftsman in second division Qualified in Estimating
5	Rajendra Kumar Gupta	Certificate as Draftsman in second division Qualified in Estimating
6	Itant Ali Khan	Certificate as Draftsman in second division Qualified in Estimating

1942

PERCENTAGE OF MARKS OF STUDENTS

The following table shows the percentages of marks gained by the various classes for the last five years and the numbers that qualified —

Year	Civil Engineer Class									Overseer Class					
	3rd Year			2nd Year			1st Year			2nd Year			1st Year		
	Highest marks	No qualified	Average marks	Highest marks	No qualified	Average marks	Highest marks	No qualified	Average marks	Highest marks	No qualified	Average marks	Highest marks	No qualified	Average marks
1937-38	78	21	66	79	23	65	80	31	65	78	36	60	76	42	59
1938-39	73	24	59	78	31	64	81	34	66	76	44	62	86	41	69
1939-40	75	26	65	83	32	63	79	30	65	82	41	61	85	47	.
1940-41	82	32	66	82	30	64	75	34	64	82	44	62	90	37	59
1941-42	80	28	66	78	35	62	79	35	62	79	34	60	78	48	58

ANNUAL REPORT.

FROM

RAI BAHADUR MADAN GOPAL SARDANA PRINCIPAL,
THOMASON COLLEGE OF CIVIL ENGINEERING

ROORKEE

TO

THE DEPUTY SECRETARY TO GOVERNMENT

UNITED PROVINCES,

EDUCATION DEPARTMENT

Dated Roorkee the 15th July 1942

SIR,

I HAVE the honour to forward herewith the annual report on the Thomason College of Civil Engineering at Roorkee for the session 1941-42 together with the statement of accounts for the financial year ending 31st March 1942

ADMINISTRATION

2 The following non officials and officials were members of the College Advisory Council during the session

(a) Mr L B Gillett B SC I S E Chief Engineer
Buildings and Roads branch United Provinces *President*

(b) Mr G Lacey B SC M INST CE C I E, Chief
Engineer Irrigation Branch United Provinces as well
as representative of the Institution of Civil Engineers,
London

(c) Mr J C Powell Price M A, C I E I R S Director
of Public Instruction United Provinces

(d) Dr N N Godbole M A, B SC PH D (Berlin),
Professor of Industrial Chemistry and Dean of the

1942

PERCENTAGE OF MARKS OF STUDENTS

The following table shows the percentages of marks gained by the various classes for the last five years and the numbers that qualified.—

Year	Civil Engineer Class									Overseer Class					
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	Highest marks	No qualified	Average marks	Highest marks	No qualified	Average marks	Highest marks	No qualified	Average marks	Highest marks	No qualified	Average marks	Highest marks	No qualified	Average marks
1937-38	78	21	66	79	25	65	80	31	63	78	36	60	70	42	59
1938-39	73	24	59	78	31	64	81	34	66	76	44	62	86	41	69
1939-40	75	26	65	83	32	63	79	30	65	82	41	61	85	47	.
1940-41	82	32	66	82	30	64	75	34	64	82	44	62	80	37	59
1941-42	80	28	66	78	33	62	79	35	62	79	34	60	78	48	58

COLLEGE STAFF

The following changes, etc occurred in the College Staff during the session

(i) Mr P L Sharma, Lecturer in Drawing, remained on leave on average pay on medical certificate with effect from 8th December 1941, to 10th June, 1942 Mr S K Gupta officiated in the leave vacancy from 24th January, to 3rd June 1942

(ii) A temporary post of Lecturer in Civil Engineering was created and Mr Jai Krishna, Personal Assistant to Principal, was appointed to it from 16th December, 1941 This post was later on made permanent

(iii) Mr Kasu Saran Misra was appointed to officiate as Personal Assistant to Principal with effect from 19th January, 1942

(iv) Mr V G Garde, M Sc, Assistant Professor of Civil Engineering, on probation, was confirmed in his appointment with effect from 16th October, 1941

(v) Dr Z U. Ahmed, Lecturer in Electrical Engineering, on probation, was confirmed in his appointment with effect from 16th October, 1941

(vi) Mr Jagdamba Prasad, Assistant Professor of Mechanical and Electrical Engineering Benares Hindu University, Benares, was appointed as officiating Lecturer in Mechanical Engineering from 9th January 1942 vice Mr B L Sharma

(vii) Mr P C Sen Gupta, officiating Headmaster, Overseer Class, was confirmed in his appointment

DEPARTMENTS

The departments into which the College is divided remain-

Faculty of Technology, Department of Industrial Chemistry, Benares Hindu University, nominated by the United Provinces Government as representative of the University Education

(e) Mr H G Trivedi, M I E , A M I C E , Superintending Engineer Public Health Engineering Department, United Provinces, represented the United Provinces Branch of Institution of Engineers India

(f) Major Raja Durga Narain Singh, M I A of Tirwa, district Farrukhabad and Major Nawab Mohammad Jamshed Ali Khan M B E M L A , Baghat Meerut, were nominated as representatives of the United Provinces Legislature in place of Thakur Phul Singh Sahib B A , L L B , M L A , and Pandit K D Malviya M S C M L A , whose terms of office expired on 26th January 1911 respectively

(g) Rai Bahadur Madan Gopal Sardana, Principal, Thomason College of Civil Engineering, Roorkee, *ex officio* Secretary

A meeting of the Council was held on 11th May, 1912

REORGANIZATION COMMITTEE

Orders of Government were received on many of the resolutions passed by the Committee Some of the resolutions are still under consideration of the Government

BOARD OF STUDIES

The Board as in the past years met on various occasions during the session and assisted the Principal by offering their advice and opinion on several matters connected with the internal working of the College

COLLEGE STAFF.

The following changes, etc occurred in the College Staff during the session

(i) Mr P L Sharma, Lecturer in Drawing, remained on leave on average pay on medical certificate with effect from 8th December 1941, to 10th June, 1942 Mr S K Gupta officiated in the leave vacancy from 24th January, to 3rd June, 1942

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(vii) Mr P C Sen Gupta, officiating Headmaster, Overseer Class was confirmed in his appointment

DEPARTMENTS

The departments into which the College is divided remained unaltered.

Faculty of Technology, Department of Industrial Chemistry, Benares Hindu University, nominated by the United Provinces Government as representative of the University Education

(e) Mr H G Trivedi, M I E , A M I C E , Superintending Engineer, Public Health Engineering Department, United Provinces, represented the United Provinces Branch of Institution of Engineers, India

(f) Major Raja Durga Narain Singh, M L A , of Tirwa, district Farrukhabad and Major Nawab Mohammad Jamshed Ali Khan, M B E M L A , Bighat Meerut, were nominated as representatives of the United Provinces Legislature in place of Thakur Phul Singh Saheb, B A , L L B , M L A , and Pandit K D Makaya, M S O , M L A , whose terms of office expired on 26th January, 1911, respectively

(g) Rai Bahadur Madan Gopal Sardana, Principal, Thomason College of Civil Engineering, Roorkee, *ex officio* Secretary

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Orders of Government were received on many of the resolutions passed by the Committee. Some of the resolutions are still under consideration of the Government

BOARD OF STUDIES

The Board as in the past years met on various occasions during the session and assisted the Principal by offering their advice and opinion on several matters connected with the internal working of the College

(b) The specifications could have been shortened, and should not have been repeated over and over again

(c) The detailed quantities of work were carefully worked out in detail, but, in many cases, were carelessly abstracted, and, one or two cases, not abstracted at all

(d) The analyses of rates were very well thought out, and only in one case were no analyses given.

(e) In many cases, the abstracts for the whole project was carelessly prepared, evidently due to want of time. This abstract is most important, and more time should have been allotted to it by the students

(f) In most cases the mileage of the road were not shown on the index plan nor on the survey plans. These plans are practically useless without the mile ages on them. Except for these omissions the survey plans on the whole were very well executed as also were the longitudinal sections. Generally the formation level of the proposed road was so fixed on the longitudinal sections as to give an economical quantity of earthwork to be done

(g) The project included a major project over the Ram Ganga river. The designs were very well thought out and the calculations carefully prepared. The detailed drawings were very complete, and the plans, on the whole excellent. The waterway provided varied from 1,100 ft to 1,200 ft. All provided for piers and abutments founded on wells. In all but four cases circular wells were provided. The four exceptions provided twin octagonal wells. With regard to the superstructure, everyone provided

CIVIL ENGINEERING

The appointment of a Lecturer in the Civil Engineering department relieved the Civil Engineering Staff to a certain extent but one more lecturer is still required in this department. The normal instruction has, however, been carried out.

One student of the Civil Engineer class 3rd year had to be expelled from the College for this session as a disciplinary measure.

Projects—The 3rd year students were given the usual Minor and Major projects.

The Minor project was for the Sewage disposal of the College area.

The major project was set by W. F. Walker, Esq., I.S.E., Superintending Engineer, Buildings and Roads Branch, Public Works Department, Lucknow. It was for a first class metalled road from Afzalgarh to Nagina railway station in the Bijnor District. It was examined by Mr. M. B. Hatfield, Executive Engineer, Kumaon Provincial Division, Naini Tal as Mr. Walker could not do so due to pressure of work. His report is as follows:

1. The students were in a series of five groups. There were two possible routes—one direct and the other via Dhampur—Sherkot. Four out of five groups selected the longer route via Dhampur and one selected the direct route.

2. On the whole the projects were very well thought-out but badly compiled. The various major sub-heads of work were mixed up one with the other, and not kept separated.

1. The following points call for remarks:

(a) Many of the students wrote much on irrelevant matter.

(b) The specifications could have been shortened, and should not have been repeated over and over again

(c) The detailed quantities of work were carefully worked out in detail, but, in many cases, were carelessly abstracted, and, one or two cases, not abstracted at all

(d) The analyses of rates were very well thought out, and only in one case were no analyses given

(e) In many cases, the abstracts for the whole project was carelessly prepared, evidently due to want of time. This abstract is most important and more time should have been allotted to it by the students

(f) In most cases the mileage of the road were not shown on the index plan nor on the survey plans. These plans are practically useless without the mile ages on them. Except for these omissions the survey plans on the whole were very well executed as also were the longitudinal sections. Generally the formation level of the proposed road was so fixed on the longitudinal sections as to give an economical quantity of earthwork to be done

(g) The project included a major project over the Ram Ganga river. The designs were very well thought out and the calculations carefully prepared. The detailed drawings were very complete and the plans on the whole excellent. The waterway provided varied from 1,100 ft to 1,200 ft. All provided for piers and abutments founded on wells. In all but four cases circular wells were provided. The four exceptions provided twin octagonal wells. With regard to the superstructure everyone provided

reinforced concrete T-beams. Six students provided T-beams continuous over two spans whereas the remainder provided T-beams freely supported in each span. Only a few students made provision for expansion and contraction of the T-beams at the freely supported ends over the abutments and piers.

(h) The students were asked to prepare an estimate for a combined Assistant Engineer's residence and a sub divisional office. In many cases the buildings were designed as separate buildings instead of one combined building. On the whole, the designs were good and had been carefully thought out in detail. In most cases reinforced brickwork roofs were provided but in a few reinforced concrete joists spanned by jack arches were employed to avoid the use of too much steel due to the war.

(i) In many cases the permissible limit for the cost of an Assistant Engineer's residence was not considered.

(j) With regard to the proposals for the road, most of the students provided the surface of tar, but one group provided a thin coat of cement concrete. Unless traffic of this road increases greatly due to the existence of a *pacca* road, the census figures do not warrant the heavy expenditure on concrete. Peculiarly enough most of the road estimates were not compiled correctly and concisely. The specifications were too long and the material for compiling the abstract of cost scattered over the whole project."

Visits to Works—As far as the funds permitted, visits to various engineering works were arranged for the Civil

Engineer class, 3rd Year students The works visited by them are as given below

Civil Engineer class, 3rd year—Dellu Waterworks, Cement Concrete Road and Hume Pipe and Brick Sewer construction, Sewage Disposal Works, Sewage Pumping Station Okhla Headworks, All India Radio and Government of India buildings Legislative Assembly and Secretariat buildings

These visits are of the greatest value to the students and it is requested that the allotment for this purpose may be enhanced

Survey—The Survey Camp of 2nd year Civil Engineer Class was held near Landhaura in February 1942 The broken and undulating ground in this area was very suitable for triangulation and subsequent mapping work During the course of three weeks students received very useful practical instruction

The College has the reputation of imparting a high class of training in survey This high standard of efficiency is still being maintained as is amply borne out by the I R S E Examination results in this subject where students have scored top marks in the subject

The Survey Department has given on loan a large number of survey instruments such as theodolites levels compasses and binoculars to the Central P W D and the Army Department for carrying out survey in connection with urgent war work Mr S R Singh Officer in charge Survey after testing and adjusting these instruments at a very short notice made them available for use The spirit with which he worked is highly appreciated

Chemistry—The work in this department remained as in the past and was carried out satisfactorily

reinforced concrete T-beams Six students provided T-beams continuous over two spans whereas the remainder provided T-beams freely supported in each span Only a few students made provision for expansion and contraction of the T-beams at the freely supported ends over the abutments and piers

(h) The students were asked to prepare an estimate for a combined Assistant Engineer's residence and a sub divisional office In many cases the buildings were designed as separate buildings instead of one combined building On the whole, the designs were good, and had been carefully thought out in detail In most cases reinforced brickwork roofs were provided but in a few reinforced concrete joists spanned by jack arches were employed to avoid the use of too much steel due to the war

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Visits to Works—As far as the funds permitted, visits to various engineering works were arranged for the Civil

Two students of Overseer class, 2nd year were expelled from the College for this session as they were found copying from pre written slips in the examination hall

The 2nd year students prepared the following designs

- (1) A steel truss
- (2) A hostel for accommodating the technicians
- (3) A distributary fall
- (4) A syphon
- (5) R C Floor
- (6) A R C Foot Bridge
- (7) Plate girder bridge
- (8) A small masonry bridge

The project prepared by the 2nd year Overseer class this year was a proposal to extend irrigation facilities to the Wharhi area lying to the south of the East Indian Railway and bounded on the west by the Ganges Canal on the south by the Bijhauri drain and on the east by the Sohni River Khadir. It was set by Mr Naubat Rai I S I Executive Engineer Northern Division Ganges Canal Roofee

Due to the stringency of funds it has not been possible to send out the Overseer Class 2nd year to visit works of interest. The students gain much useful knowledge from these visits and for the proper training of the overseers it is essential that the requisite funds be provided for the continuance of such instructional tours

DRAUGHTSMAN CLASS

The control of the class had to be transferred to the Head Master Overseer class temporarily due to Mr P L Sharma proceeding on medical leave

The session commenced with 18 students in all the three years but two more students joined the 1st year class later on

PURE AND APPLIED MATHEMATICS AND PHYSICS

Regarding this department nothing is to be added to the report that was made last year

DEPARTMENT OF MECHANICAL AND ELECTRICAL ENGINEERING

In Electrical Engineering department there was no special change and the work was carried out as usual. The Mechanical Engineering Department, however, was very heavily worked this year owing to the addition of the training of 300 War technicians in practically every trade that could be taken up by the workshops. In the beginning the whole work was carried on by Mr B L Sharma but later on in December, Mr Jagdamba Prasad joined as Lecturer in Mechanical Engineering and two specialist instructors from United Kingdom were also appointed. This relieved Mr Sharma to some extent.

The question of funds for the purchase of machinery for the Heat Engine Laboratory was placed before the Advisory Council, who agreed to the proposal and recommended that a Vertical Steam Engine with Surface Condenser and a auto-cycle oil engine be provided after the war.

The motor generating set has been ordered through the Department of Labour. The United Provinces Government has promised to allot funds for the same when required.

OVERSEER CLASS

The situation as regards the staff is still the same as in the previous year, and instruction is being carried on with the help of the Civil Engineer class staff.

The new syllabus of the Overseer Class has been introduced from this session in the 1st year class.

Two students of Overseer class 2nd year were expelled from the College for this session as they were found copying from pre written slips in the examination hall

The 2nd year students prepared the following designs

- (1) A steel truss
- (2) A hostel for accommodating the technicians
- (3) A distributary fall
- (4) A syphon
- (5) R C Floor
- (6) A R C Foot Bridge
- (7) Plate girder bridge
- (8) A small masonry bridge

The project prepared by the 2nd year Overseer class this year was a proposal to extend irrigation facilities to the Khaki area lying to the south of the East Indian Railway and bounded on the west by the Ganges Canal on the south by the Bijhauri drain and on the east by the Solani River khadir. It was set by Mr Naubat Rai 1st Executive Engineer Northern Division Ganges Canal Roorkee

Due to the stringency of funds it has not been possible to send out the Overseer Class 2nd year to visit works of interest. The students gain much useful knowledge from these visits and for the proper training of the overseers it is essential that the requisite funds be provided for the continuance of such instructional tours

DRAUGHTSMAN CLASS

The control of the class had to be transferred to the Head Master Overseer class temporarily due to Mr P L Sharma proceeding on medical leave

The session commenced with 18 students in all the three years but two more students joined the 1st year class later on

PURE AND APPLIED MATHEMATICS AND PHYSICS

Regarding this department nothing is to be added to the report that was made last year

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additions it is hoped to put up a better performance next session.

The interest in Hockey was as keen as ever and once more we had an easy win over the Royal Engineers

The game of Football was popular amongst students

Squash remained, as before, the most popular game in the College. The College won the Olympic matches and also defeated the Royal Engineers in two friendly matches. Squash balls have become scarce and costly and next year it may become difficult to carry on the game properly.

Boating was very favourite with students and they took a keen interest in the College Regatta. Owing to the number of oars available for rowing having gone very low and our helplessness in replacing the old broken ones the Double Sculls had to be given up altogether this year. The remaining events, however, were very much contested.

HEALTH

The health of the students has been excellent this year.

DISCIPLINE

The discipline of the College on the whole has been good. A more rigid enforcement of the College Standing Orders has resulted in considerable improvement in the tone of discipline.

CIVIL ENGINEER CLASS STUDENTS CLUB AND MESS

Club—As on previous occasion there was keen contest for the post of office bearers of the club. Some secretaries showed slackness in the discharge of their duties and the rules have been tightened to enable the slackers to be replaced. The indoor games showed great enthusiasm, the number of entrants being specially large this year.

This year the new syllabus was introduced in the 1st year class. In accordance with the new syllabus the students are given lectures on Drawing, Building Construction and Mensuration with a view to enable them to learn computing and estimating properly. The medium of teaching was vernacular. Due to the dearth of text books in vernacular, however, the progress of the class was rather slow.

SPORTS AND REGATTA

The annual sports were held on Wednesday, 19th December 1941, and the annual regatta on 1st June 1942. On both the occasions the staff and students were 'At Home' to old students and residents of the station.

The annual athletic sports were run practically on the same lines as last year. The students were entrusted with the running of the events so far as appeared feasible. The height of the hurdles was modified to 2 ft 6 in which is the requisite height for the 220 yards low Hurdles race.

The outstanding performer of this year was C. C. Gilbert who won most of the prizes.

The Vizianagram cup by the order of the Government was to be awarded from this year onwards to the best Indian Athlete of the Civil Engineer class, 3rd year, who does not win the Lion Trophy. The question of awarding this cup was unanimously decided by the Sports Committee on a system of marking for the competitors of this particular class. This proposal was accepted by the Principal and the draft rules for its award in future are under preparation.

The standard of tennis continued to be fairly high. The College won three matches out of four in the Olympic.

The students were quite keen on cricket this year. The new classes supplied some promising players and with the e

Cure Captain B L Sharma delivered a lecture on Air Raid Precautions , which is a subject of special interest these days Twenty six papers were read by 14 students on Engineering and subjects of general interest The standard of some of the papers was very satisfactory and indicated that the speakers had taken pains to read up the subjects The attendance at the meetings was made compulsory for all these classes

BOOK DEPOT

Government Branch Press Book Depot where students can obtain copies of the text books recommended by the College at 12½ per cent off published prices continues to work satisfactorily

COLLEGE MANUALS

No revised manual has yet been sent to Press for printing Revision of Survey Manual Part II has been completed by Mr S R Singh and that of Building Construction is also nearing completion Irrigation Manual, Parts I and II are being revised by Rai Bahadur M C Bhat and Drawing Manual by Mr P L Sharma

LIBRARY

Library lacks many recent books of importance on engineering subjects and also renewal of old and out of date books More shelves are required to keep the books and this is being looked into

BUILDINGS AND GROUNDS

The College Estate has been maintained in as satisfactory a condition as possible The abnormal rise in prices of various building materials further restricted the quantity of work that could be done In addition to this the Government cut down the grant from Rs 28 080 to Rs 24 080 last year and

A new gramophone has been added this year

Common Mess—The common mess continues to serve as a very useful institution. It has brought about all the advantages of a common table and has increased harmony amongst the students. The membership remained 72 throughout with of course, temporary increase during the Project and Summer Camps. The crockery purchased last year proved to be of a inferior quality and has given way. Ice cream freezers and some glassware and crockery worth Rs 200 were purchased recently but a lot more are still needed. Government has kindly allotted funds for remodelling the dining hall.

OVERSEER CLASS CLUB

The club continues to serve the useful purpose of a common meeting place for the O S students. A room has been added to the club premises.

The scheme to improve the football and hockey grounds has also been completed. The students still seem to lack interest in athletic sports and boating.

THE LION MAGAZINE

Only one issue of the magazine came out this year. The Students did not take enough interest in the College magazine. It has been proposed to award prizes for the best articles and cartoons in order to attract more contributions.

THOMASONIAN SOCIETY

The Thomasonian Society meetings continued to evoke keen interest amongst the students of all classes. Nine meetings were held during the session. Dr R S Agarwal of Delhi delivered lectures on Defective Insight and its

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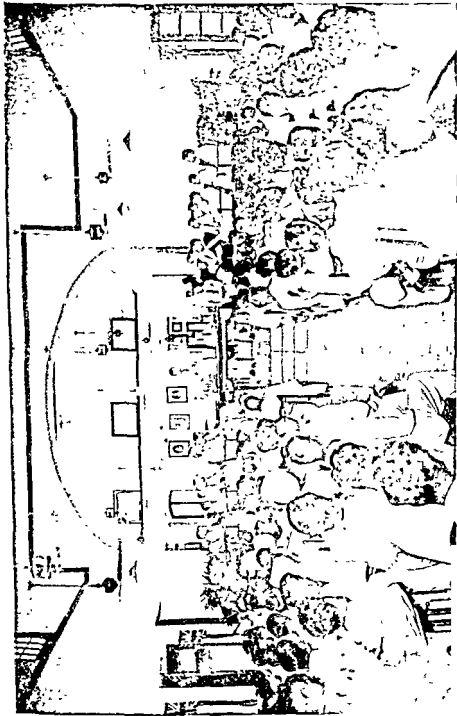
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COLLEGE CONVOCATION
July 13, 1942



Hall G. Lacey Esq., C.I.E., B.Sc., M.I.E.S.E., Chief Engineer United Provinces Public Works Department, Irrigation Branch very kindly presided. The Principal, Rai Bahadur Madan Gopal Sardana opened the proceedings with the following address

Mr Lacey Ladies and Gentlemen,

On behalf of the College Staff and students I most heartily welcome you as our Convocation President. I realize how trying it is in this part of the season to undertake journey and I also admit the heavy responsibilities of your own work which hardly permits deviation. Yet, that you have been able to find time for us, is evidence of your care and keen interest for the institution. As a Professor of this College before and now as President of the College Advisory Council and Head of the Irrigation Branch, United Provinces, you have in you theory practice and organization personified and no occasion better than this could be suitable to have you amongst us as our President for guidance and trained advice. I again welcome you.

The visitors, official and non official who have joined us today setting aside their comfort and their usual work, have participated, needless to say at a great personal sacrifice. Their visit has encouraged us and I heartily welcome them.

Ever since I joined the College I have been thinking of having an up to date hydraulics laboratory. I fully realize that due to financial stringency this may not be the time for asking for more money but I am glad to report that there are prospects for making a modest beginning and this would form the nucleus for a first class laboratory in better times when funds are available.

Last year I stated in my report that improvements were being made in the syllabus of the Overseer Class. These have now been approved by Government and the revised syllabus has been introduced from this year. There was a great congestion of the subjects of Civil Engineering in the 2nd year before. These have now been spread evenly over both the years and good many

of them are now taught in the Ist year. Also, the Indian Posts and Telegraphs Department have now agreed to permit our students to sit for the competitive examination for the cadres of Engineering Supervisors and Wireless Operators.

The revised syllabus of the Draughtsman Class, has also been approved by Government and introduced from this year. On further consideration it has been felt that to enable the students to get full benefit of the revised course of study it is necessary to raise the qualifying standard of the candidates for the admission examination. This can be done provided their prospects in the departments are also improved. A proposal in this connexion is being submitted to Government.

The College is doing war work in training B N C Os to work as Sub Divisional Officers in the Military Engineering Services and war Technicians in various trades. Two batches of B N C O have already been trained and a third batch of 12 students is now under training. They are given intensive training for four months and sent back to the Military Department.

The scheme for training war technicians in this College was started in July 1941 with 16 candidates to begin with. By November we had over 200 trainees on our rolls. In the beginning the training was carried on entirely by our usual staff and this entailed very heavy work on the Mechanical and Electrical Department. There was some relief when Mr Rogers Instructor from the United Kingdom joined us on 13th December 1941 and Mr Hotchkiss on 16th March 1942. We are now carrying on training in different trades and very soon we shall also be training Moulders and Surveyors. The present strength is nearly 370 and our full quota has been recently increased to 600. So far we have sent out 200 trained technicians to the Army and very soon another batch of nearly 100 trained men will be leaving us.

We have also been helping the various departments who wanted survey instruments for war purposes. So far we have lent 15 theodolites and 14 levels.

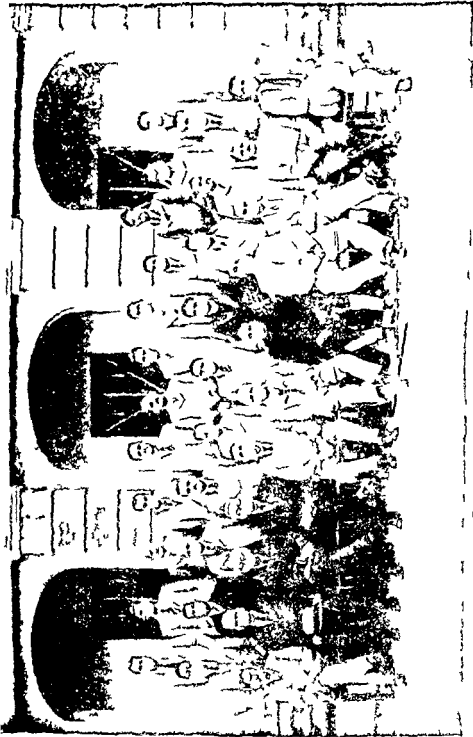
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THOMASON COLLEGE OLD BOYS ASSOCIATION

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The Old Boys' Association about which I mentioned in my last report has since been formed and its membership is steadily increasing. Already 63 members have joined it.

The College has again done very well and maintained its reputation in the competitive examination of the Indian Railway Service of Engineers and Central Public Works Department. Five out of thirteen candidates selected are the passed students of this College.

The students continue taking a keen interest in all sports and games as usual and their health has been very good throughout the year. The C. I. Mess is retaining its popularity and the number of members was 72 throughout the year. The present dining hall is inconvenient and this was noticed by the Director of Public Instruction last year. I am glad to say that he has now allotted funds for enlarging it. This work will be carried out during the vacation and this would fulfil a long-felt need of the College. The discipline of the students has been good on the whole.

There have been several changes in the staff during the year. On the transfer of the services of Lt Col Crawford to the Defence Department Mr B. L. Sharma was promoted as Assistant Professor of Mechanical and Electrical Engineering and to fill the vacancy caused, Mr Jagdamba Prasad was appointed as Lecturer in Mechanical Engineering. He joined the College on 9th January, 1942. As the staff for teaching Civil Engineering was short, Government has kindly sanctioned a Lecturer in Civil Engineering. Mr Jai Krishna who was working as Personal Assistant to Principal, was appointed to this post and took up his duties on 16th December, 1941. Mr Kashi Suran Mehta was appointed as Personal Assistant in his place and joined us on 19th January, 1942. Mr P. L. Sharma, Lecturer in Drawing unfortunately met a car accident and had to remain on leave from 8th December 1941 to 10th June 1942. Mr Shri Kant Gupta who joined the College on 21st January 1942 officiated for him till 3rd June, 1942. We welcome Messrs Jagdamba

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Prasad and Kashi Saran Misra and hope they will do their utmost to give their best to the College and maintain its high reputation

I now with your permission Sir review the work of the last year

The Council of India Prize of Rs 1 000 awarded to the best student of the Civil Engineering class passing out has been won by Mr Prem Manohar B.Sc. He has obtained 80 per cent marks and has also secured the following prizes

- 1 Crutley Memorial Gold Medal for Mathematics Group II
- 2 Calcott Reilly Memorial Gold Medal for Applied Mechanics
- 3 General MacLagan Prize of books for Electrical Engineering and Physics
- 4 Silver Medals for Civil Engineering (Theoretical) and Laboratory Practice Group IV (Practical)

The Thomason Prize of Rs 250 which is awarded to the second best student has been carried off by Mr Indra Kumar Gupta B.Sc. who has obtained 78 per cent marks

The Rai Bahadur Kanhaya Lal Gold Medal for the third best student goes to Mr Ajit Kumar Chakravarti B.Sc. who has also won Sushla and J. Mitra Memorial Silver Medal for Highest Marks in Chemistry. Mr C. C. Gilbert has been awarded the passing out scholarship of Rs 250 for the senior European or Anglo Indian student passing out of the College

All of them deserve our hearty congratulations

The best award of the College i.e. the Thomason Memorial Gold Medal for the best engineering designs has been won by Mr Parshottam Saran Agrawala B.Sc. who has obtained 87 per cent marks in the two projects. He has also won silver medal for Surveying. Our heartiest congratulations are due to him for his brilliant achievement. The Major Project this year was

set by Mr. W. I. Walker I.S.R., Superintending Engineer Buildings and Roads Department Lucknow. It was for a metalled road from Nagina to Afzalgarh. Due to pressure of work Mr. Walker could not examine the project himself. This had to be done by Mr. M. B. Hatfield I.S.R. Executive Engineer Buildings and Roads Department Nainital. His remarks on the project are as below:

The plans were very well thought out and the calculations carefully prepared. The detailed drawings were very neat and the plans on the whole excellent. The waterway provided varied from 1100 ft. to 1,200 ft. All provided for piers and abutments founded on wells. In all but four cases circular wells were provided. The four exceptions provided twin octagonal wells. With regard to the superstructure every one provided reinforced concrete T beams. Six students provided T beams continuous over two spans whereas the remainder provided T beams freely supported in each span. Only a few students made provision for expansion and contraction of the T beams at the freely supported ends over the abutments and piers.

We are indebted to Messrs. Walker and Hatfield and to Mr. Nubut Rai Executive Engineer Northern Division, Ganges Canal, who examined the Overseer Class project for the trouble they took in setting and examining the projects.

In the Civil Engineer class 3rd year all the students have passed except one who had to be expelled for one year as a disciplinary measure. Out of 28 students 11 have obtained Honours Diplomas. The students have again done very well in the final examination, papers for which are set by external examiners. The first student has got 79.1 per cent marks the average marks of the whole class being 58.6 per cent.

In the 1st and 2nd year classes all the students have passed.

In the Overseer 2nd year class all the students except one have passed. He cannot be allowed to repeat the course as he has already been in the class for three years.

Mr. Jagdish Chander Perti stands first in the class, obtaining 79 per cent marks. He has also won silver medal and Rs 100 for general merit, Rai Bahadur Kanhaya Lal silver medal for the Indian student who stands first in the class and silver medals for Mathematics (Elementary) Applied Mechanics, Descriptive Engineering, Surveying Workshops Groups V and also the Durga Das Dutt Silver Medal for the best Indian student obtaining higher certificate.

In the Overseer 1st year class two out of 50 students have failed. They will be allowed to repeat the course.

The annual sports this year were held on 19th December, 1941. The outstanding performance was of Mr C C Gilbert who won most of the prizes. He was awarded the Leon Trophy for the Individual Championship of the College and also the Bradshaw Smith Challenge Cup for Cross Country race. There was a tie for the Runner up Cup between Mr G Siddiqui of Civil Engineer class, 2nd year and Mr P C Sharma of the draughtsman Class. The Barnett Cup for the Overseer Class Championship was won by Mr Shamim Husain and the Stampe Cup for Inter Class Championship by the Civil Engineer Class, 3rd year.

The Annual Olympic Contest with the Royal Engineers was won by the College for the fifth year in succession, the College winning 3 out of 5 events. The College has, therefore, won the cup 13 times and the Royal Engineers 9 times.

The Annual Regatta was held on 1st June, 1942. Owing to a large decrease in the number of oars and owing to our helplessness in replacing the old oars by new ones, the Double Sculls had to be given up this year. We were thus left with three events instead of four in the Regatta. These were, however, keenly contested, the entries being quite as large as in the previous years and the performance of the competitors was very good.

There are 48 students now in the College U T C Platoon. There is still room for further expansion and as suggested in previous years we can easily put up 2

War is the topic of the day. It surrounds us and is affecting our daily life. The brunt of it will be felt most fully by you as you start your career. As mere bread winners your course will be easier to traverse than your predecessors, but *mere winning is not all*. You must have an ideal as food for your aesthetic life. What that ideal should be? In peacetime I should have said that whatever your environments, be upright, truthful and dutiful in everything you do. Now I should say the same thing but as your surroundings are war surroundings I should advise each of you to contribute actively in the *successful termination of the war and save the world* from further obliteration of men, money and material. You should rid yourself of wishful thinking and facing facts work to your ideal and as you go out, may courage and success attend your cause.

In the end it is with a deep sense of praise and gratitude that I speak of the unqualified co-operation which I received throughout from my entire staff. They have been extremely helpful to me in every way.

With your permission, I now request you, Sir, to address the assembly and give away the prizes."

' Mr Sardani, Ladies and Gentlemen,

When, a few days ago, I studied the list of those distinguished officers and public servants who have addressed you in the past at Convocation I felt the more honoured that I had been invited to preside today, it is no empty form of speech to say that the fact gives me pleasure, for my contacts with the Thomason College of Civil Engineering extend over more than a quarter of a century and my interest in your College, which may justly claim to be the premier institution of its kind, not only in India, but in the East, is sincere and lasting.

It was during the Great War that I officiated as your professor of Civil Engineering for two years, before being released for military duty with the Sappers, to which corps your College has in the past owed so much, there was an interlude of a dozen years ago when I rejoined your staff for four years and today when another and more devastating war is in progress the Roorkee College claims me, on the eve of my retirement, if only for a day.

For the greater part of my service I have worked with engineers educated at Roorkee as my colleagues and have lived to see my early students earn distinction and elevation to administrative rank. I know from experience their capacity, their industry and devotion to duty. They, and others who have sought employment in a wider field than Government service, have earned a reputation that stands high in the engineering profession and it rests with you students of today, the engineers of tomorrow, each to resolve that he will preserve that reputation, untarnished and undimmed.

The service which your College renders in the education of civil engineers has in the past somewhat overshadowed its second function of training overseers many of whom find employment in our Subordinate Engineering Services. I remember very well, in my first year of service as an assistant engineer, reflecting, when I had just given an order to an Overseer, that his position was somewhat unfortunate as he had no one to whom he could

ANNUAL REPORT

train him, but must carry it out himself. Late experience taught me that there was a useful individual known as the overseer's mate, who collected the labour that the overseer controlled. It is however none the less true that the overseer, whenever there is real work to do, finds himself in the firing line.

The Overseer's job was a calling which is centuries old and which goes little to the West. There is not a well and truly laid in India's finest ancient monument which is not a memorial to the skill and industry of supervisors, the forefathers of our overseers today. I must mention in that same overseer, to whom I gave first prize, and I place it on record that others emulate his example, that he subsequently served seas in the last war, earned promotion to gazetted rank and received the distinction of Rai Sahib. His is an isolated instance of rewarded merit and the same opportunity may still be seized by the overseers of today. I am glad to note that overseer students can now sit for posts of engineering supervisors and wireless operators and need hardly draw attention to the career now open to them in the Military Engineering Service.

I am glad to hear that the College U. T. College has maintained its excellent record, and also that the College is playing so great a part in the war effort in the training of B. N. C. O.s and in particular of war mechanics. I will not deal in greater detail with these activities lest inadvertently information were given to the enemy which we all hope they will acquire later other times, and places, in a more salutary way.

I congratulate the College on another excellent record of work and play, and Mr. Sardani on the co-operation he has found in his staff. The College is fortunate in possessing as its Principal and old colleague of mine, an engineer of established reputation and of sympathy and understanding.

gaged in a vital Olympic contest with powerful and unscrupulous enemies, and, if we have lost one or two events, that should spur us to redoubled efforts in future. There is also the probability that towards the end, we shall add, without regard to the published programme, events of our own, which we are certain of winning, and which will turn the scale.

I doubt whether there is another engineering College in the world so happily endowed, as the Thomason College in its surroundings. You have glimpses of the eternal snows, not always revealed, but sensed none the less even when obscured, to inspire you with a love of knowledge, of science and of truth, and the monumental works of that great giant among engineers, Sir Proby Cautley, to show the heights to which a man can aspire and succeed. You have a fine tradition handed down from the early days when the College was first founded, a tradition born of discipline and of courage. There was never a time when such qualities were so badly needed—to those two must be added one more, which all great engineers seek in their work, endurance.

If we endure and seek each to the limit of his individual capacity, to do all he can by word and deed to further the war effort, we will prevail. When that victory comes which not all of us may see, the civil engineer will come into his own again and find an immeasurable field in which he can labour for the advancement of an India, at peace with the world—and with herself."

Mr G. Lacey then gave away the prizes.

I have the honour to be

Sir,

Your most obedient servant

MADAN GOPAL SARDANA,
Principal.

APPENDIX I

Consolidated abstract of payments of Education Department in the United Provinces for the year 1941-42 including March 1942 (Final)

Number of detailed heads	Heads of payments	Amounts
	Government Professional Colleges (a) Civil Engineering College, Roorkee	
	(i) College Department	
	<i>Pay of officers</i>	Rs. p. a. p.
28	Principal (Voted)	13,000 0 0
29	Professors (Voted)	28,496 15 0
31	Other officers (Voted)	59,071 6 0
32	Medical Officers special pay	701 13 0
33	Allowances to instructors	136 0 0
34A	Duty Bonus residence out of Family allotment of officers (Voted)	— 089 11 0
	Total (Vote I)	<hr/> 99,983 7 0 <hr/>
	<i>Pay of establishment</i>	
35	Instructors	9,830 5 0
36	Foremen Draughtsmen Mechanics etc.	906 9 0
37	Passed apprentice overseers	1,614 11 0
38	Clerks	10,087 6 0
39	Servants	6910 3 0
40	Medical establishment	480 14 0
	Total (Vote I)	<hr/> 32,140 0 0 <hr/>
	<i>Allowances and Honoraria</i>	
41	Travelling and other allowances (Voted)	1,717 10 0
42	Ditto (Charged)	100 0 0
45	House rent and other allowances (Voted)	1,219 0 0
45A	Compensatory dearness allowance	294 14 0
	Total { Voted	<hr/> 3,191 8 0 <hr/>
	{ Charged	<hr/> 100 0 0 <hr/>
	Total College Department carried { Voted	<hr/> 1,34,614 15 0 <hr/>
	over { Charged	<hr/> 100 0 0 <hr/>

Consolidated abstract of payments of Education Department in the United Provinces for the year 1941-42, including March, 1942 (Final)—(concluded)

Number of detailed heads	Heads of payments		Amounts	
			Rs.	a. p.
Total, College Department, brought forward.	{	Voted	1,34,614	15 0
		Charged	100	0 0
<i>Contingencies</i>				
47. Purchase and erection of machinery workshop			13,362	15 3
48. Laboratory—(a) Purchases from England
49. Laboratory—(b) Purchases in India	3,478	15 6
50. Maintenance of generating station	4,016	6 3
51. Survey expenses	5,053	12 3
52. Material for industrial class	403	2 9
53. Excursion charges of students	772	8 0
54. Stores (in India)	1,164	4 3
55. Prizes and fees	1,973	0 0
56. Other supplies and services	8,748	7 0
57. Customs duty on stores	41	2 0
58. Contract	8,289	7 0
59. Pay of menials	9,104	14 0
<i>Non-contract</i>				
60. (a) Purchases from England	80	8 0
61. (b) Purchases in India	2,000	8 0
Total (Voted)		..	58,492	14 9
Total, College Department	{	Voted	1,93,107	13 9
		Charged	100	0 0
62. Deduct—Contribution from other Governments for training of students	—20,748	0 0
TOTAL, ROORKEE COLLEGE..	{	Voted	1,72,359	13 9
		Charged	100	0 0

Consolidated abstract of receipts of XXVI—Education in the United Provinces, for the year 1941-42, including March, 1942 (Final)

Number of detailed heads	Heads of receipts	Amounts
F—Civil Administration, XXVI—Education, Provincial		
A—University		
		Rs a. p
503	Fees Civil Engineering College, Roorkee .	33,671 14 0
E—General		
Miscellaneous		
511	Examination fees, Civil Engineering College	7,492 5 0
512	Sale-proceeds of books, Civil Engineering College	10 0 0
513	Workshops manufacture	51 15 0
515	Rent on buildings	12,722 3 0
517	Miscellaneous	21,320 10 0
	Income from endowments	469 14 6
	Receipts other than revenue	0 9 0
<hr/>		
*	Electric light receipts	8,317 11 0
	Conservancy tax	1,248 11 0
	Water tax from students	10,132 1 6
	Miscellaneous including water tax on residential buildings	1,022 2 0
	Total	<u>21,320 10 0</u>

*Statement of the annual accounts of the Thomason College
of Civil Engineering Workshops Roorkee, for the year
1940-41*

Receipts	Amounts	Expenditure	Amounts
	Rs a p		Rs a p
Manufacture .	124 10 0	Salaries of Assistant Professor of Mechanical and Electrical Engineering	9 593 4 0
Electric light charges	7 065 6 0	Salaries of Lecturer in Mechanical Engineering	7,647 1 0
		Salaries of Lecturer in Electrical Engineering	3 685 0 0
		Salaries of Foremen and Assistant Foremen	5,498 14 0
		Salaries of Lines man	600 0 0
		Salaries of Store keeper	420 0 0
		Salaries of Electrical Laboratory Attendant	420 0 0
		Salaries of Electrical Laboratory boy	167 4 0
		Salaries of Mistry, Water works	480 0 0
		Salaries of Workshop Guards	723 11 0

*Statement of the annual accounts of the Thomson College
of Civil Engineering Workshops, Roorkee, for the year
1940-41—(continued)*

Receipts	Amounts	Expenditure	Amounts
	Rs. p.	Manufacture	Rs. p.
		Non-contract Contingencies—Purchase cost of erection and maintenance of Machinery Tools and Plant Workshop	12,931 3 0
		Maintenance of Generating Station	4 493 15 6
		Laboratory and class charges	399 15 6
		Electrical Laboratory	445 15 6
		Special grant for Electric Laboratory equipment	1,144 10 0
		Cost of energy	6 250 0 0
		Maintenance and repairs (Water works)	1,510 3 0
Total	7,191 0 0	Total	56,426 0 6

Manufacture account

(Including credit sales of stock and instruction charges for students)

Cash receipts	124 10 0	Opening balance	
Unrealized balance	1 2 0	Labour	11 12 0
		Stock (including credit sales)	77 11 9
		Direct charges	33 5 0
		Profit on private works	2 15 3
Total	125 12 0	Total	125 12 0

Stock account

Opening balance	855 15 3	Issues to works including credit sales	77 11 9
Cash purchases		Closing balance	778 3 6
Total	855 15 3	Total	855 15 3

Statement of the annual accounts of the Thomason College of Civil Engineering Workshops, Roorkee, for the year 1940-41—(concluded)

Receipts	Amounts	Expenditure	Amounts
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Energy account

	Rs. a. p.		Rs. a. p.
Cash receipts ..	7,066 6 0	Cost of energy ..	6,250 0 0
Unrealized balances.	62 3 0	Profit ..	878 9 0
Total ..	7,128 9 0	Total ..	7,128 9 0

Tools and plant account

Opening balance	77,012 13 0	Depreciation ..	7,758 5 0
Purchases during the year.	1,210 2 0	Closing balance ..	70,464 10 0
Total ..	78,222 15 0	Total ..	78,222 15 0

TABLE I

Statement showing comparative results of entrance examinations for five years

Name of class	1937			1938			1939			1940			1941		
	British	Indians	Total	British	Indians	Total	British	Indians	Total	British	Indians	Total	British	Indians	Total
<i>Civil Engineer Class</i>															
Examined	1	93	94	1	106	107	3	91	94	111	114	125	119	121	140
Passed		30	30	1	41	42	1	43	44	37	37	74	7	7	14
Admitted		27	27	1	32	33	1	30	31	70	70	140	70	70	140
Unprivileged	3	7	10	1	1	2				3	3	6	1	1	2
<i>Overseer Class</i>															
Examined		272	272		257	257		250	250	243	243	243	119	119	119
Passed		40	40		74	74		87	87	87	87	87	63	63	63
Admitted		45	45		40	40		40	40	41	41	41	40	40	40
Unprivileged					3	3		4	4				0	0	0

* Including I. M. A. G. cadets

TABLE IV

Comparative statement of religious denominations of the staff and students

Class	1937-38				1938-39				1939-40				1940-41				1941-42			
	Christians	Hindus	Muhammadians	Total	Christians	Hindus	Muhammadians	Total	Christians	Hindus	Muhammadians	Total	Christians	Hindus	Muhammadians	Total	Christians	Hindus	Muhammadians	Total
Staff	5	35	2	42	3	31	3	37	1	30	5	36	1	29	5	30		31	5	6
Students	3	105	11	119	2	176	22	200	2	180	22	204	2	176	30	208	2	171	29	202
Apprentices Overseers	..	17	1	18		9		9	7			7	7			7				
Total	8	217	14	239	5	216	25	246	3	217	27	247	3	212	35	250	2	202	34	238

TABLE V

Comparative statement showing the transactions of the various College funds from 1st April, 1911 to 31st March, 1912

(The property of the funds is excluded)

Name of fund	Balance on 1st April 1911	Receipts during the year 1911-12	Total	Expenditure during the year 1911-12	Balance 31st March 1912	Remarks
	Rs a p	Rs a p	Rs a p	Rs a p	Rs a p	
Civil Engineer Class						
Recreation	2851 4 10	7484 2 0	10335 7 7	7000 0 0	3335 7 7	
Club	1098 4 8	4102 12 11	5201 1 0	3741 1 3	1460 0 7	
Mess (Common)	1301 11 9	1000 0 5	2301 1 4	1300 13 0	1001 8 4	
Passing out scholar ship for Europeans	877 4 8	209 10 0	1086 14 8		1140 14 8	
Other Class						
Recreation and Club	2622 14 0	2647 11 5	5270 0 5	1000 0 0	2010 0 5	
Boating	2619 3 7	1,636 14 10	4255 3 7	700 13 0	3455 3 7	

TABLE VI

Statement showing the number of candidates registered and the number who have obtained employment during 1937 to 1941

Grade	1937		1938		1939		1940		1941	
	Reg- istered	Ap- pointed	Regis- tered	Ap- pointed	Regis- tered	Ap- pointed	Regis- tered	Ap- pointed	Regis- tered	Ap- pointed
Engineers	2	2	8		2	6	2	1	1	2
Upper Subordinates										
Overseers	13	8	13	3	10	8	2	4	17	10
Lower Subordinates										
Draughtsmen	2	1	1		3		2	1		1
							2	1		2
Total	17	11	2	3	15	14	8	7	18	15

